DECEMBER 1957

# PURCHASING

The Methods Magazine for Industrial Buyers

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Should Know
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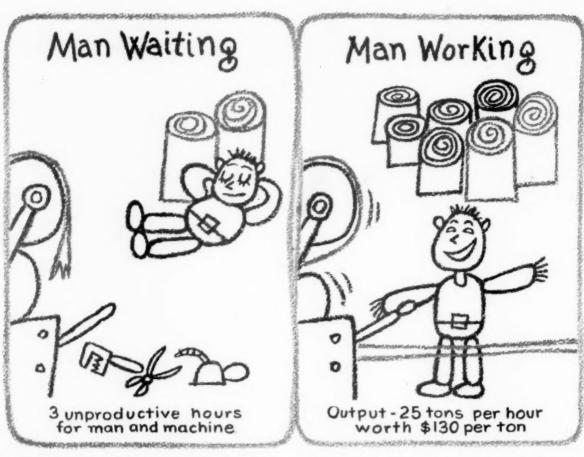
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**PURCHASING Becomes** 

A Bi-Weekly!

More Methods Articles
Purchasing Research Studies
Timely N.A.P.A. Reports
New Features for Buyers



In the past, production losses due to breakdown of dryer roll bearings were so small they could be made up.

Today shut down of high-speed machines puts production behind by hundreds of tons per hour—quickly piles up losses.

## Lubricating plan cuts downtime —can save \$10,000 in 3 hours

Not so long ago, machines shut down by bearing failure could make up production losses. Today volume output and integrated production mean that production losses are losses in profit. These are the reasons behind management's growing concern with lubrication methods in their plants.

Take this example from the paper industry: they used to figure \$500 for a bearing, \$500 for labor (idle time and repair crew) and expected to make up losses on the two or three hours downtime. Today, high speed machines produce twenty-five tons of paper per hour worth \$130 per ton. You can't ignore \$3,000 an hour in production

losses. In this case, the cost of the bearing replacement could run as high as \$10,000.

Lubrication problems differ with specific industries, but the basic principles are the same. Many companies are finding that the services of a plant lubrication engineer pay off. His services can extend part life, eliminate production losses, reduce rejects, simplify lubricant inventories and otherwise add to income. Some companies delegate lubrication responsibility to engineers or plant personnel who also perform other duties.

In both cases, Texaco's organization of Lubrication Engineers is function-

ing in all 48 States, as consultants in outlining a practical approach to these problems. A more detailed discussion is available in an enlightening booklet: "Management Practices That Control Costs Via Organized Lubrication." Write The Texas Company, 135 E. 42nd St., New York 17, N. Y., Dept. P10.



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(PARTS, INVENTORY, PRODUCTION, DOWNTIME, MAINTENANCE)

For More Information Circle No. 151 on Inquiry Card-Page 17

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New IR 40 with 48-Frame motor. Gear housing shown is in one of eight possible positions. Open type single phase capacitor-start Type CS motor. Strong welded foot assembly and heavy motor frame assure smooth operation with severe sprocket loading. Ratings up to ½ HP.



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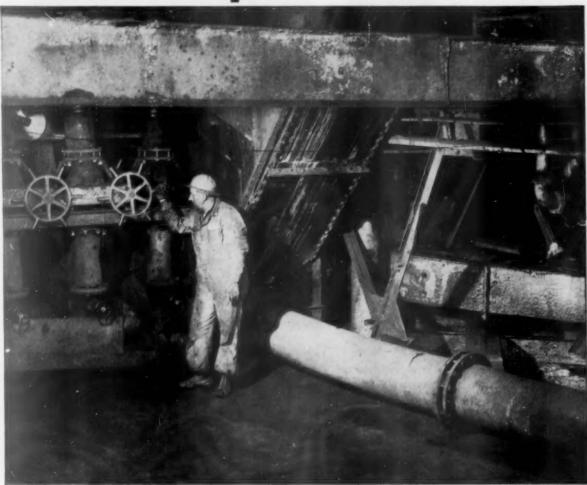


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# **B.F.Goodrich report:**



Thete courtesy North American Coal Corp., Cleveland, Ohio.

# Hose swallows needle-sharp slivers of coal

#### B. F. Goodrich improvements in rubber brought extra savings

Problem: At this mine, coal is put through a huge washing machine that shakes rock and sand out of the coal, much like a home washer shakes dirt out of clothes.

The water—8000 gallons of it a minute—used to be circulated in and out of the coal washer by steel pipes. But the water is loaded with tiny particles of coal—hard and sharp, like needles—that wore holes right through the steel. Welders worked every weekend, patching holes. The pipe was being replaced every year.

What was done: When a B.F. Goodrich

distributor heard about the trouble, he suggested a rubber hose developed by B.F.Goodrich for handling rough materials. It is made with a special lining of the toughest wear-resisting rubber known. This rubber is so tough that, on many jobs, it outlasts the hardest steel 10 to 1.

Savings: The B.F.Goodrich rubber hose was tried. You see one big length of it at right in the picture. It has been on the job over 4 years now, and is still in excellent condition. No holes, no repairs, no problems of any kind.

Where to buy: Your B.F. Goodrich

distributor has exact specifications for the B.F.Goodrich hose described here. And, as a factory-trained specialist in rubber products, he can answer your questions about all the rubber products B.F.Goodrich makes for industry. B.F.Goodrich Industrial Products Co., Dept. M-225, Akron 18, Ohio.



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# P.M. of another good day

"Good" because this Inland Steel mill representative has just spent the day with a customer. Tired though he is, he's had the satisfaction of helping another steel user solve a knotty problem. That's his job—his and other Inland men like him who bring expert metallurgical knowledge to every assignment. They can help you select proper steels, establish specifications and may even suggest techniques to speed production, lower manufacturing costs. It's this kind of service that makes it good business to call on Inland for your steel needs.



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#### CHECK THIS PAGE NEXT MONTH

for details on articles, new position of Pulse of Business and other features. "Highlights of the Issue" and Table of Contents of the new bi-weekly PURCHASING will be combined on this page.



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#### Saves 30% time

The Columbus Heating & Ventilating Co., Columbus, Ohio, owns an all-around inventory of SKIL tools. The reason: practically no maintenance, lightweight, better balance, adaptability. Mr. Clarence Fine, shop foreman, singled out the SKIL Model 825 Disc Sander as a tool that stands up under continuous operation. "In addition", says Mr. Fine, "it's 30% faster than anything else we've tried."



#### Saves 8 hours labor costs a week

Five years ago, Trailmobile, Inc., Cincinnati, bought a SKIL Model 450 Radial Saw. Since that time four more such saws have been added with these results: "Each one saves us one 8 hour day labor costs per week", says Mr. Herman Suter, portable tool supervisor. "We have eliminated the sanding operation of rough edges caused by a cutting torch."

# It's true! You SAVE with SKIL Tools

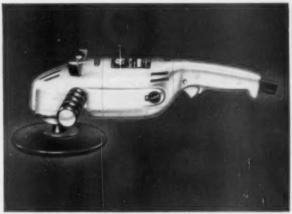


#### Saves \$100.00 per week

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## 71 days for pipe-over 4 years for hose

Carrying off highly abrasive sand- and coal-dust slurry was plain murder on the heaviest steel pipe used at this Pennsylvania coal-cleaning plant. None lasted more than 71 days. Then there'd be another shutdown—and another expensive reinstallation.

But that was before the G.T.M.—Goodyear Technical Man—recommended a special hose designed

for super-resistance to abrasion. At last check, this hose had been in service 1500 days-more than 4 years. And it was still going strong.

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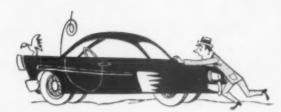


BECOMING IRRITABLE AT ASSOCIATES?





USING TRIAL-AND-ERROR METHODS?



NEW MODELS CREATING PERFORMANCE PROBLEMS?



NO PROBLEMS? (LUCKY FELLOW)





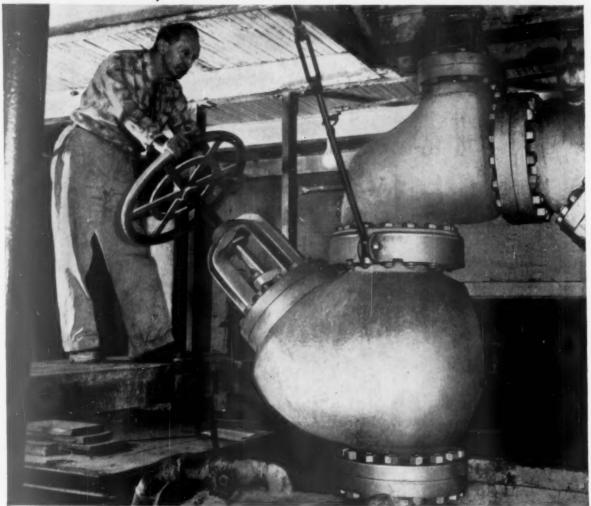


HARASSED BY SPACE PROBLEMS?

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## Crane Valves Pay for Themselves in Trouble-Free Maintenance



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This remarkable case history proves how the right valve can save money in repairs and maintenance—again and again.

This Crane 10-inch stop-check valve has been in use since 1906 at Seattle Cedar Lumber Mfg. Co., Seattle, Wash. Operating at 360° F. and 150 psi., the valve is closed every third or fourth night when one of 3 boilers is shut down. The valve is also closed every 3 weeks when the boiler is down for inspection and

cleaning. About a year ago, this Crane No. 28E Ferrosteel valve was opened for inspection, cleaned up, and put back into service. Repair parts needed? None.

In short, all 50 years have done to this Crane valve is emphasize how rugged and dependable it has proved, and how important it is to use quality valves on every service. For complete information on any valve problem, contact your Crane Representative.



YOU'LL FIND GOOD tips on valves in "Valve Performance Facts"—32 case histories throughout industry. Ask your Crane Man for a copy or write to address below.

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by A. N. Wecksler

December 1, 1957

#### WEAPONS RACE STEPPED UP

Soviets have upset our timetable—and the impact will affect both our military and economic plans. A U.S. crash program in missiles will nip plans for lower military spending. Hopes for stable prices, lower taxes, a halt to inflation—all may be doomed.

In store now is an all-out effort to restore our leadership in weapons.

The Soviets have been calling the turn since the end of World War II. They have taken the initiative—first, with their push into Greece, then with the blockade of Berlin. Korea added another chapter—the Chinese Reds were in the forefront, but the Soviets backed them up.

Add to this the Soviet thrust into the Near East and their latest accomplishments in rocket propulsion and satellite technology.

#### INFLATION THREAT

<u>U.S.</u> answer—as in the case of the previous Soviet thrusts has been slow and confused. In the past, it has taken up a period of time to fully understand the extent of the threat which is posed. It takes us time to get rolling.

In the present period, we were in the process of folding our tents—reducing the size of our military, cutting back on our defense effort.

U.S. economic policy was girding against inflation—not against a first class opponent in rocketry.

#### P.A.'S IN LINE OF FIRE

This policy had immediate impact on military procurement. Rate of delivery of military hardware was cut back.

Purchasing agents in industry were first to be affected. PA's were told to live on inventory. Objective was to cut down the rate of cash outflow—to reduce the rate of military spending.

Purpose was economy. It was also believed that less spending would cut down on price inflation. If the policy worked, some reduction in taxes would be possible next year.

This was typical peace thinking-just like the thinking that



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preceded the Berlin Airlift, or the business-as-usual period before Korea.

BASIC METALS PLENTIFUL

Crash program in missile development will not have same impact on materials as Korea. Missiles effort puts a strain on some materials-but not on the basic metals of our normal econ-

omy. It uses electronics. But most of all, it uses money.

This need for money will require an increase in the debt ceiling, which will have to be by act of Congress. Congress, however, is not slow to respond to the kind of prod that is supplied by Soviet satellites.

What will happen to the battle against inflation? Given the choice between survival and inflation, there is only one answer. The question is not whether we will take more inflation, but how much?

PRESSURE ON PRICES CONTINUES

If military spending increases—as is plainly indicated there still remains the fundamental question as to what happens to basic materials prices. Costs of production go up—but the stepped up military effort does not take a greatly increased tonnage of steel, copper, aluminum, zinc or lead.

The World War II formula based on steel, copper and aluminum

as the backbone of the military economy, no longer applies.
Under these circumstances, increased defense spending does not mean a sharp spurt in prices. It does mean steady pressure in the direction of higher prices.

MISSILE BUYING POLICY EXAMINED

Military policy in development and procurement of longrange ballistics missiles will be carefully studied to discover the weakness in our system.

Until the Soviet achievement in orbiting satellites, there had been a tacit acceptance that we may make mistakes-but that we can afford to err. Also, that on balance our good qualities far offset our mistakes.

This attitude can be sustained when the competition is not doing any better-but with evidence that we have been caught napping, there is bound to be severe examination of our policies and practices to discover our shortcomings.

The obvious public attitudes are: 1. that more money should be spent, 2. that missile development can yield more results merely by greater emphasis on the program, and 3. that you do what you have been doing, but put more effort into it, do it

A more analytic approach will show that while more money and effort might further our progress in ballistics missiles, other factors have a direct bearing on our lag in achievement. Among these:

1. A lack of interchange of development data and information among contractors working on so-called "competing" U.S. missiles; 2. a tendency to build up contractor organizations into a team with team players. This sometimes limits individual efforts in making new discoveries; 3. a lack of research and development effort at the component level in missile development, with indications that the problem has not been of failure in our science or engineering-but in design and development of components.

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Purchasing Magazine

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# SPECIAL SERVICE FOR READERS! WEALTH OF INFORMATION AT YOUR PENCIL TIP!

Additional data is available on the equipment, materials, services or methods described or advertised in this issue of PURCHASING.

The Reader Service Card on this page is your simple, handy method of getting more information on the items of interest to you.

ONE CARD is all you need for as many items as you desire. A second card is provided for those to whom you pass your copy of PURCHASING.

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# Purchasing Magazine

205 E. 42nd ST., NEW YORK 17, N. Y.

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#### IT'S AS EASY AS THIS



- EACH ITEM, AND EACH AD,
   HAS A NUMBER
- DECIDE ON WHICH ITEMS YOU
   WANT MORE DATA
- CIRCLE THE CORRESPONDING
   NUMBERS ON THE CARD
- SIGN THE CARD, AND MAIL.
   NO POSTAGE IS NEEDED
- PURCHASING WILL HAVE THE MANUFACTURER FILL YOUR REQUESTS

READER SERVICE is a monthly feature of PURCHASING Magazine designed to help the reader get all the information needed with the minimum of time and effort.

# catalog files

#### information for your

#### BALL BEARINGS

A 40-page, 2-color catalog, supplying full specifications, covers ball bearings of extremely small dimensions for precision instruments. A section explains numbering system.

**New Departure** 

Circle No. 1 on Inquiry Card-Page 17

#### CASTERS, HANDLING EQUIPMENT

Over 10,000 industrial casters and 500 different types of handling equipment are described in a 4-color, plastic coil bound, catalog. Products are classified into 4 major areas.

Colson Corp.

Circle No. 6 on Inquiry Card-Page 17

#### BALLS

Bulletin No. 101 gives information about "microvelvet" balls of chrome steel, stainless, brass, monel and bronze in various grades and in sizes from 1/16" to 4½" diameter.

Hoover Ball & Bearing Co.

Circle No. 2 on Inquiry Card-Page 17

#### COPPER, BRASS

A tabbed, 60-page booklet lists all copper and brass items stocked for immediate shipment from the company's warehouses at Chicago, Cleveland, Milwaukee, Philadelphia, Providence.

American Brass Co.

Circle No. 7 on Inquiry Card-Page 17

#### BATTERIES

The complete scope of motive-power battery maintenance and repair is covered in "Battery Users Manual," No. GB-1599A. Photos and tables explain theory of battery construction.

Bould-National Batteries, Inc.

Circle No. 3 on Inquiry Card-Page 17

#### CYLINDERS

Full information and engineering specifications are supplied on five types of air and hydraulic cylinders, ranging from 1" to 10" sizes. Also covered are special cylinders up to 16" bore.

Petch Mfg. Co.

Circle No. 8 on Inquiry Card-Page 17

#### BLAST CLEANING MACHINES

Photos and schematic drawings show in a 34-page brochure how airless, air and wet blast cleaning procedures have been employed in various applications. Fifty case histories are given.

Wheelabrater Corp.

Circle No. 4 on Inquiry Card-Page 17

#### FASTENERS

A 16-page booklet discusses lead error in fasteners, showing how a 0.002" error can keep an otherwise perfect ½" diam screw from fitting even a perfectly tapped hole.

Standard Pressed Steel Co.

Circle No. 9 on Inquiry Card-Page 17

#### BLOWPIPE

A blowpipe, for welding any metal thickness from 28 gage sheet to 3" plate, is described in 8-page booklet, Form No. 1107. It handles gas flows from 2 to 1500 cfhr.

Linde Co.

Circle No. 5 on Inquiry Card-Page 17

#### FASTENERS (STAINLESS)

Thread and design specifications of forty basic fastening devices in a variety of corrosion-resistant metals, as well as engineering data, are contained in a 2-color, 52-page data book.

Allmetal Screw Products Co., Inc.

Circle No. 10 on Inquiry Card-Page 17



#### **FITTINGS**

Bulletin No. 140 (8 pp) describes and illustrates brass hose fittings for low and medium pressure service in conveying air, spray, steam or other applications needing industrial rubber hose.

Hose Accessories Co.

Circle No. 11 on Inquiry Card-Page 17

#### GLASSWARE (LABORATORY)

The economics involved in purchasing lime and borosilicate glassware for laboratory use are discussed in a 16-page, 2-color pamphlet. It discusses proper spheres of use of both.

Doerr Glass Co.

Circle No. 12 on Inquiry Card-Page 17

#### HEAT EXCHANGE COSTS

A booklet gives a rapid analysis of the comparable costs between a plain condenser tube and a Rufin type S/T shell and tube exchanger over the range of the more common uses.

Calumet & Hecla, Inc.

Circle No. 13 on Inquiry Card-Page 17

#### HOSES

Facts and figures concerning chemically resistant, high and medium temperature hose and hose assemblies for industry are supplied in a 12-page brochure of technical data.

Resistoflex Corp.

Circle No. 14 on Inquiry Card-Page 17

#### ICE, SNOW CONTROL

Four-page pamphlet, No. 35, illustrates how and why rock salt is safer and more economical for ice and snow control on streets and roads. How to use it for de-icing is shown.

The Morton Sait Go. Circle No. 15 on Inquiry Card—Page 17

#### MAINTENANCE

The latest information on sanitation and maintenance products for industrial and institutional buildings is supplied in a 44-page catalog. It lists floor maintenance and cleaning products.

Huntington Laboratories, Inc.

Circle No. 16 on Inquiry Card-Page 17

#### MILL PRODUCTS, ALLOYS

Containing colorful illustrations and full tables, a 12-page brochure reviews in detail mill products in aluminum, titanium and other metals, covering shapes, sizes and alloys.

Harvey Aluminum

Circle No. 17 on Inquiry Card-Page 17

#### MOTORS (HOLLOW SHAFT)

Bulletin No. 2050 (4-pages) discusses climatized vertical hollow shaft motors. It stresses that the enclosure provides all-weather security for shallow and deep well turbine pumps.

The Louis Allis Co.

Circle No. 18 on Inquiry Card-Page 17

#### MOVING HEAVY LOADS

How to move loads from 3 to 300 tons is explained in a booklet containing 26 photos and diagrams. Utilizing a 12" heavy duty dolly, loads can be pushed or pulled over rough surfaces.

Stokvis\* Edera & Co., Inc.

Circle No. 19 on Inquiry Card-Page 17

#### NICKEL-CHROMIUM ALLOY

Metallurgical data and design information on Chromel-A, an 80-20 nickel chromium resistance alloy used as heating elements in electrical units are contained in 20-page manual, M-57A.

Hoskins Mfg. Co.

Circle No. 20 on Inquiry Card-Page 17

#### PALLET (STEEL)

A 2-page colored leaflet describes a pallet, made of 5 gage steel rods and  $3/16'' \times 5'''$  steel bars, resistance welded for strength. With a 10,000 lb capacity, it outlasts 15 wood units.

Fleetce Steel Pallet Sales Co.

Circle No. 21 on Inquiry Card-Page 17

#### PLASTICS (COLORED)

How plastics are color-matched to other materials by a method that has developed over 38,000 color formulations is explained in a 20-page book, replete with full color illustrations.

Eastman Chemical Products, Inc.

Circle No. 22 on Inquiry Card-Page 17

Circle Card Opposite Page 17
to Obtain These Catalogs

Additional Catalogs on Page 20

#### News about Hypalon®

HYPALON doubles service life of belt carrying salt at 302° F.

An elevator belt, with cover made of Du Pont's new synthetic rubber Hypalon, has twice the life span of the best rubber belts that had been used at a large chemical plant. The bucket belt—operating 80 hours a week—lifts hot salt from a rotary drying kiln to a loading platform. Average temperature of the salt is  $302^{\circ}$  F.

The elevator belt with covers of HYPALON lasted six months—twice as long as rubber belts which would get brittle and crack.

HYPALON synthetic rubber has many excellent properties which help reduce your maintenance and replacement costs. Just fill out the coupon for more details.



Elevator belt with covers of HYPALON resists extreme heat of hot salt.

HYPALON is a registered trademark of E. I. du Pont de Nemours & Co. (Inc).

# How neoprene-jacketed cable protects Capital Airlines maintenance shop



There may be gas vapors in this wing tank. So in Capital Airlines maintenance shop all electric cords are jacketed with neoprene for safety.

#### Contact with chemicals doesn't weaken cords

Capital Airlines leaves nothing to chance in its maintenance shop. For safety's sake, cables on all portable tools and trouble lamps are jacketed in neoprene.

"These cords are used inside wing tanks and parts of the fuselage where gas vapors sometimes accumulate," says C. F. Schaub, Capital Airlines Safety Director. "It doesn't take much imagination to guess what would happen if a cord shorted inside a gas tank. That's why we must use the very safest—neoprene-jacketed cable.

"The cords frequently come in contact with gasoline, cleaning compounds, paint thinner, acetone, hydraulic and lubricating oils which weaken other cord sheaths badly . . . weak spots that can lead to shorts . . . and trouble."

Mr. Schaub's experience with neoprene parallels the experience of engineers who have utilized neoprene's unique combination of properties for protective coatings, hose, gaskets, belting and other maintenance items.

Resistance to oils and chemicals, heat, sunlight and weathering, flex cracking, abrasion and cutting, oxidation and aging – all combined into one resilient material – makes neoprene a wise choice for years of problem-free service. Just clip the coupon for more information on how neoprene can work for you.

#### ELASTOMERS IN ACTION HYPALON . NEOPREN



Better Things for Better Living
...through Chemistry

|--|

City

Please add my name to the mailing list for your free publication, the ELASTOMERS NOTEBOOK.

E. I. du Pont de Nemours & Co. (Inc.) Elastomer Chemicals Dept. PC-12 Wilmington 98, Delaware For More Information Circle No. 166 on Inquiry Card-Page 17



#### PROCESSING

The 2-page bulletin, No. 178, lists all types of processing equipment for the use of the chemical, pulp and paper industries. Detailed illustrations accompany text.

Sprout Waldron & Co., Inc.

Circle No. 23 on Inquiry Card-Page 17

#### PVC PIPE, PARTS

Full information on polyvinyl chloride pipe, sheets, rods and fabricated parts for handling over 280 common corrosive solutions and gases is given in Ryertex-Omicron bulletin 80-3.

Joseph T. Ryerson & Son, Inc.

Circle No. 24 on Inquiry Card-Page 17

#### RESINS

Technical data on resins for rubber compounding are supplied in a 32-page manual. Application charts show use of rubber resins as well as resins for adhesives. Properties are given.

Schenectady Varnish Co., Inc.

Circle No. 25 on Inquiry Card-Page 17

#### SAFETY CLOTHING

Aluminized asbestos safety clothing for protection of workers in "hot spot" jobs is described and illustrated in 4-page bulletin No. 1301-7. The clothing reflects over 90% of radiant heat.

Mine Safety Appliances Co.

Circle No. 26 on Inquiry Card-Page 17

#### SCREW MACHINE PRODUCTS

A 12-page, 2-color brochure gives pertinent data about top quality screw machine products. It offers 21 points, detailing how to cut costs in specifying these products.

J. J. Tourek Mfg. Co.

Circle No. 27 on Inquiry Card-Page 17

#### STAINLESS

An attractively illustrated 32-page catalog offers the description, chemical composition, strength factors, physical properties and applications of a wide range of stainless steels.

Sharon Steel Corp.

Circle No. 28 on Inquiry Card-Page 17

#### STAINLESS SPECIFICATIONS

A chart, printed on durable cardboard stock easily identifies stainless steel Government specifications. It shows chemical analysis for the most frequently used types.

Peter A. Frasse & Co., Inc.

Circle No. 29 on Inquiry Card-Page 17

#### SUBSTATIONS (PACKAGED)

Bulletin SD-61 allocates eight pages to explain the advantages which package unit substations offer when used in modern electrical systems. High and low voltages are covered.

Square D Co

Circle No. 30 on Inquiry Card-Page 17

#### TRANSFORMERS

Every detail of single phase, 15,000 v and below, 167 kva and below, type OS distribution transformers is described in an attractive 8½" x 11" book. Tables give voltages, weights, etc.

H. K. Porter Co., Inc.

Circle No. 31 on Inquiry Card-Page 17

#### VALVES (HYDRAULIC)

Three general classes of hydraulic valves—relief, check and flow control—are covered in a 16-page catalog, No. 551. A section discusses factors governing valve selection for a job.

Fluid Controls, Inc.

Circle No. 32 on Inquiry Card-Page 17

#### V-BELTS

Booklet S-51106 describes the machines and processes used in production of V-belts. Rubber compounding, preparation of fabric, curing and finishing get 1-page treatment.

Goodyear Tire & Rubber Co.

Circle No. 33 on Inquiry Card-Page 17

#### V-BELTS (VARIABLE SPEED)

Complete cross-reference information is supplied in a 24-page catalog on every variable speed V-belt for every type of make or unit. It contains full interchange listings.

Dayton Rubber Co.

Circle No. 34 on Inquiry Card-Page 17

#### WELDING

Data book TLS 2575A devotes 180 pages to simplified welding procedures for every base metal. The book covers 120 welding rods, electrodes and welding compounds. It aids welding techniques.

Eutectic Welding Alloys Corp.

Circle No. 35 on Inquiry Card-Page 17

#### WIRING DEVICES

A full list of electrical wiring devices is available in pocket sized catalog No. 60 (80 pp). Everything from switches to lampholders are listed. A 4-page index is included.

Pass & Seymour, Inc.

Circle No. 36 on Inquiry Card-Page 17

# Self-aligning

FOR LONGER LIFE

Not even misaligned shafts or supports impair the efficiency of this easy-to-mount LINK-BELT roller bearing

THE equipment manufacturer seeking lower manufacturing costs plus the ultimate in free-rolling efficiency need look no further than this Link-Belt roller learing.

 SELF-ALIGNMENT compensates for inaccuracies in machining and assembly of equipment.

EASY MOUNTING. Bearing is securely and quickly locked by a heavy collar to commercial shafting.

COMPACTNESS offers design flexibility.

You'll find equally important economies throughout industry's most complete line of ball and roller bearing blocks. Ask any one of 40

Link-Belt offices or your authorized stock-carrying distributor for Book 2550

> Series 400 roller bearings

FREE ROLLING—SELF ALIGNING, Spherical inner ring aligns freely in any direction. Load is distributed over entire roller, assuring full capacity, Destructive edge

LINK BELT

self-aligning ball and roller bearings

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7: Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World.

# suppliers

#### in the news

Joseph G. Beasten has been promoted to manager of the Philadelphia district office of National Vulcanized Fibre Company, Wil-



Joseph G. Beasten

mington, Delaware. He succeeds Thomas B. Baldridge who has retired after 44 years of service. Mr. Beasten has been associated with the company for 30 years and in the Philadelphia office for 22 years. This office serves industry in eastern Pennsylvania, Delaware and southern New Jersey.

Frederick S. Miller has been promoted to manager of worksaver and warehouser sales for Yale Materials Handling Division, The Yale & Towne Manufacturing Company, Philadelphia. Mr. Miller had been serving as assistant sales manager of the two product lines since early 1956.

Joseph A. Boothroyd, Jr. has been named sales representative of the Size Control Company, Chicago, Illinois. Mr. Boothroyd will service the area of Philadelphia and be associated with the George S. Maier Company with offices at 500 Crum Lynne Road, Ridley Park, Pa. He has been associated with the metal working field in an enginering capacity for over ten years.

The H. M. Harper Company, Morton Grove, Illinois, has named Joseph O. Thill Pittsburgh district manager. Mr. Thill will



Joseph O. Thill

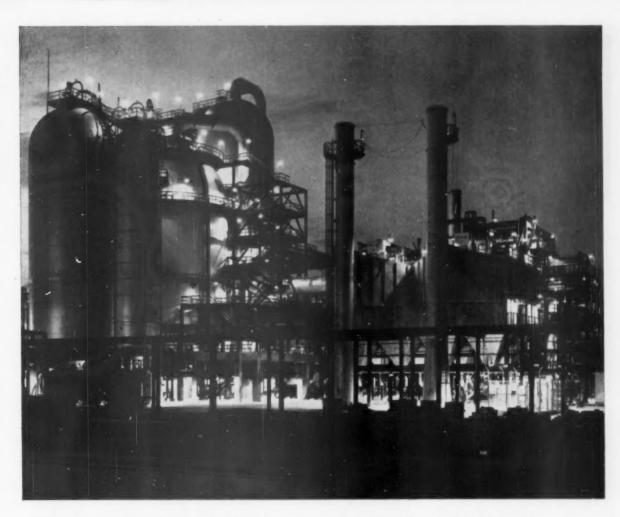
maintain the company branch office at 666 Washington Road, Pittsburgh. He is well acquainted with the fastening needs of the area because of his association since 1934 with a local rolling mill and a steel warehouse. Kennametal Inc., Latrobe, Pa., has established a Cleveland, Ohio district with Earl E. Boyer as district manager. Mr. Boyer has



Thomas J. Kniff

been a representative of the company in Cleveland since 1952, and has managed the Cleveland office as a branch of another district since July, 1955. This change eliminated the central district, now to be called the Detroit district with Thomas J. Kniff as district manager.

James Overall has joined the sales department of Fischer & Porter Co., Hatboro, Pa., as manager for the pulp and paper industry. In this capacity Mr. Overall will coordinate sales efforts directed to the paper industry of the company field offices in the U. S. and Canada.



Because exceptional resistance to corrosion is needed...

# 57 miles of Rome Synthinol 901 building wire installed in just one major oil refinery

Under actual working conditions at a major oil refinery in Southern California, Rome's Synthinol 901 outperformed every other building wire tested. The other wires included regular TW, neoprene-covered, and braided rubber-insulated building wires. Lead-covered wire was also tried; and it was entirely satisfactory except for the excessive cost and handling problems.

Rome's Synthinol 901 was used extensively for the low-voltage wiring in this refinery because of its proven resistance to moisture, oil, and corrosive vapors—environmental hazards common to refinery operations. These low-voltage applications—600 volts and under—include not only control circuits but also the general wiring of office and warehouse buildings and refinery equipment.

Plant and oil refinery engineers have also found that Synthinol 901's superior heat deformation resistance make it particularly applicable in locations where greater than normal heat conditions exist. In fact, it's now being used in place of Type TA asbestos-covered wire in panel boards and switchboards where high temperatures are known to occur. Rome's Synthinol 901 has proven to be an entirely satisfactory and economical solution to the exacting demands of this type applica-

tion. Try Rome's Synthinol 901—under your own operating conditions—and see for yourself how well it performs. You'll find it's ideal for low-voltage circuits in refineries, chemical plants, and similar installations where electrical wiring is exposed to corrosive atmospheres.

Specify Rome's Synthinol 901 for your next job. Contact your nearest Rome Cable representative for more information—or write to Dept. 321, Rome Cable Corporation, Rome, N. Y.

# ROME CABLE

CORPORATION



William A. Kerr has been appointed general sales manager of the Electronics & Instrumentation Division, Waltham, Massa-



William A. Kerr

chusetts, of Baldwin-Lima-Hamilton Corporation, Philadelphia, Pennsylvania. Mr. Kerr previously had been vice president and general manager of the Nuclear Divisions of Tracerlab, Inc. In his newly created post as general sales manager, Mr. Kerr will head the sales activities on the division's three product groups: SR-4 gages and systems, testing machines and special products.

Roy E. Slipiec has been appointed Midwest sales representative of Geigy Industrial Chemicals, Division of the Geigy Chemical Corporation, Ardsley, New York. His sales headquarters are located at 629 West Washington Boulevard, Chicago, Illinois.

Additional "Suppliers in the News"
will be found following the
Industrial Development section

Don L. Warner has been appointed sales representative in the Philadelphia area for the Marsh Instrument Company, Sko-



Don L. Warner

kie, Illinois. He will serve eastern Pennsylvania, New Jersey, District of Columbia, Maryland and Delaware. The new company sales office in Philadelphia will also be under his direction. Mr. Warner has been associated with the firm's sales staff for the last eight years.

Jerome S. Stanford has joined Olin Mathieson Chemical Corporation, New York, as executive



Jerome S. Stanford

assistant to the vice president of sales for Olin Aluminum. Mr. Stanford will assist in coordinating the Aluminum division's sales, sales planning and services. He will be located at the division's sales headquarters in New York.

Thomas E. Turner has been made sales representative for Leschen Wire Rope Division, H. K. Porter Company, Inc., St.

Louis, Missouri. His territory will include Virginia, West Virginia and North Carolina. Prior to this appointment he had been a sales representative for Esso Standard Oil Company covering the state of Virginia.

Fred H. Ueckermann has been named Chicago district manager, wire rope division of John A. Roebling's Sons Corporation,



Fred H. Ueckermann

Trenton, New Jersey. Mr. Ueckermann has represented the firm in various sales capacities for



Harry L. Truitt, Jr.

22 years. Harry L. Truitt, Jr. will replace Mr. Ueckermann at Atlanta, Georgia. Mr. Truitt has been a sales representative in the Florida territory for the past five years.

Hagan Chemicals & Controls, Inc., Pittsburgh, Pennsylvania, has named Thomas M. Nourse head of central station sales. In the newly created position, Mr. Nourse will direct sales of Hagan control systems and instruments in the utility power plant field.



#### **Amweld**\*Hits Your Cost Target

Forming and flash butt-welding of mill-rolled or extruded shapes has cut the cost of rings and other circular parts by as much as 50%!
Savings to one manufacturer in reduced machining time and material was \$220.63 per ring. Where expensive metals such as titanium and heat-resistant alloys are used, flash butt-welding offers the most economical and practical method of manufacturing circular products.

Similar economies are also realized on carbon steels and less expensive metals.

Write today. Let our engineering department demonstrate how Amweld can help you cut production costs on rings, bands and circular components.

THE AMERICAN WELDING & MANUFACTURING CO.



OF PRODUCTION
FACILITIES
Send for your

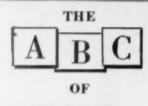
copy now!



AMERICAN WELDING

The World's Leading Manufacturer of Welded Rings

For Mare Information Circle No. 169 on Inquiry Card-Page 17





## Why is COUNTROL

important in every business today?

Countless times a day, every business needs to know "how many? . . . how much? . . . how far? . . ." and many other questions that can be answered only by facts-in-figures. But how to get these figures . . . from so many different machines, processes, operations and systems? Veeder-Root Counters are doing it every day, by means of:



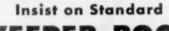
#### MECHANICAL COUNTING

Small Resets count strokes, turns, or pieces . . . are used by thousands for moderate duty in parts inspection, quality control, conveyors, machine tools, light presses, etc.



#### HAND COUNTING

Where objects or units cannot be counted electrically or mechanically, hand-operated counters like this Hand Tally do the job. For instance, quick spot checks of production or performance, traffic count, inventory, etc. Fits palm of hand, counts one for each pressure of thumb lever, resets to zero by turning knob.



#### VEEDER-ROOT COUNTERS

from your Industrial Supply Distributor





#### ELECTRICAL COUNTING

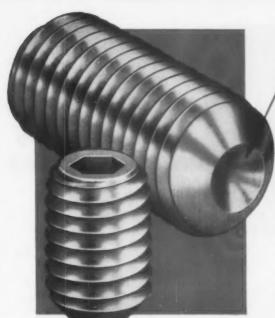
These remote-indicating counters bring your production machines as close as your office wall. AC or DC, they can be connected in series with any simple switch, and will transmit production figures instantly over any distance. May be panel-mounted in groups.



#### CONTROLLING

Set it for the exact number of turns, pieces, or operations required . . . and this Predetermining Counter will control the run exactly . . . preventing over-runs and shortages. When the predetermined number is reached, counter will light a light, ring a bell, or actuate a stop-motion.

IN SUM: If it can be counted or controlled . . . count on Veeder-Root to do it. Get in touch with your Industrial Supply Distributor for standard counters for application to your production machines and processes. And get in touch with Veeder-Root for counters to be built into original equipment. Veeder-Root Inc., Hartford 2, Connecticut.



# you a bulldog grip at no premium in price!

Allen's scientific redesign of the cup diameter on set screws gives greatly increased resistance to with-drawal torque. You can count on Allenpoint Set Screws to stay tighter longer, under heavy strain and vibrations. This dependable premium performance of Allenpoints is yours to use without increasing the cost of manufacturing your products.

#### **Uniform Class 3A Threads**

Allenpoints' smooth, uniform threads prevent off-lead conditions like Fig. 1. With Allenpoints, you have full,

even contact between the engaging flanks of the threaded members (Fig. 2)—and a tight friction lock over the entire length of the Allenpoint Set Screw.





## Strong, clean, deep sockets allow full wrenching leverage



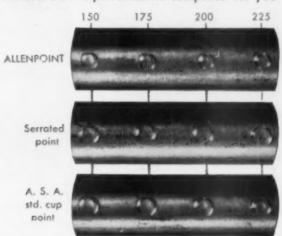
Sockets of Allenpoint Set Screws are cold forged to produce a deeper, smoother socket. No broach chips to interfere with proper seating of the key. This "pressur-forming" preserves the long steel fibers throughout the length of the screw-stronger walls allow maximum tightening torque.

#### One more full thread on ALLENPOINTS!

Allenpoint Set Screws have one more full thread than serrated point set screws. That means more holding power-especially important when you're using short lengths.



#### ALLENPOINT's performance compared for you



These actual-size, unretouched photographs show the cup pattern made by Allenpoints, serrated points, and A.S.A. standard cup point set screws in a 3/4" steel shaft. At each degree of tightening force, Allenpoints make a full circle pattern, penetrating deeper for greater holding power.

We'll be glad to send you more information and samples of Allenpoint Set Screws and other Allen Socket Screw products.

Stocked and sold by leading industrial distributors everywhere

ALLEN

MANUFACTURING COMPANY Hartford 2, Connecticut, U.S.A.





#### for instance

Ever stop to think how valuable it is to get prompt quotations, reliable scheduling and follow-through, as well as immediate answers to your letters?

It's the natural result of ample personnel working efficiently in modern offices.

You probably will appreciate this plus-beyondthe-price fully as much as our present customers.

A chance to quote on your next stamping requirement may well prove it!

A brochure is yours for the asking!



#### DETROIT STAMPING COMPANY

Established 1915

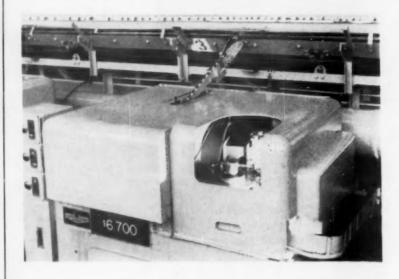
408 Midland Ave., Detroit 3, Mich.

"America's Leading Job Stamping Manufacturer"

## and remember, STAMPING is our middle name

For More Information Circle No. 172 on Inquiry Card—Page 17





HE PRICE TAG on this tape honing machine at the new Bucyrus, Ohio, plant of the Timken Roller Bearing Company wasn't put there by the manufacturer, but by the buyer. Every piece of major equipment in the plant is similarly labelled. Nearby, for instance, stands a one-pass microcentric Cincinnati grinder (\$20,200) and a magnetic chuck concentricity machine (\$4,500). It's purchasing's way of fostering the operators' respect for the tools with which they work, and a reminder of the essential role of capital in productivity and profits for modern industry, which has an investment of several thousand dollars for every worker on the payroll.

W E ARE GRATIFIED at the large number of subscribers who maintain complete files of back issues of Purchasing Magazine for reference. We sympathize with them in the problem of periodical storage space which this entails. As a practical aid in meeting this problem, we have made arrangements with University Microfilms, 313 N. First Street, Ann Arbor, Michigan, to make available a microfilm edition that will take up only about 2% of the space required for regular issues. The microfilm unit covers an entire year's issues, starting with the 1957 volume, and will be available shortly after the end of the year, to regular subscribers only.

THERE'S A SUSPICION that the competition to get new models on the market first is resulting in some premature production and distribution, before new kinks and designs are fully proved in service. As one melancholy service man expressed it, "The engineers just don't have time to take out all the bugs, and they depend on us field mechanics to do the job for them. Well, it's good for our business, anyway."

UMAN DIGNITY gets a lift whenever the new electronic calculating devices make an error, and the newspapers are quick to pick up the story. Latest publicized instance is that of the man who got a monthly telephone bill for \$1,103.99 (it should have been about \$20) along with a folder explaining the wonders of the new accounting system. Well, we've had a few arguments with the telephone company under the old manual system. One mistake isn't too bad. There's still a job for the auditor.

W EST GERMANY, which has had its share of currency troubles within recent memory, has emerged with a very healthy postwar currency and an embarrassingly mounting surplus of foreign exchange. The economists there take a dim view of the present wave of devaluations. Under pressure to revalue the mark upward so as to increase the cost of export goods and cut the cost of imported items (in terms of Deutsche marks), Dr. Ludwig Erhard, Minister of Economics, describes the maneuver as "prescribing surgery on the healthy to cure the sick."

GET READY to step on the accelerator. According to Campbell-Ewald's senior VP, E. A. Schirmer, "It's a challenging future. By 1965 your business and my business must increase by 40% if we are merely to hold our own."



Are you using wire cloth or wire cloth parts which must be corrosion resistant? Are the service conditions in your plant really tough? If you have a problem selecting the proper anti-corrosive alloy, Newark Wire Cloth may have the answer.

Available in all corrosion resistant metals, Newark Wire Cloth is accurately woven in a wide range of meshes, ranging from very coarse to extremely fine.

If you have a wire cloth problem involving corrosion, please tell us about it . . . we may have the answer.



For More Information Circle No. 173 on Inquiry Card-Page 17

# Automatic transmission seal problem—

# New National Syntech®proves dependable answer in front pump seal position

Constant temperatures of 250°F, peaks of 300°, continual change in shaft speed, and total inaccessibility of the seal without costly teardown—these are a few of the sealing problems in the front pump of today's automatic transmissions for passenger cars.

To help meet this challenge, National engineers have produced a new oil seal. The new design, a steel encased, spring-loaded unit with Syntech synthetic sealing lip, is characterized by an unusually long flex section in the lip, a special, light-loading tension spring, and the time-tested, low torque Syntech lip itself.

Factory engineers report that the new National seals are proving extremely reliable in the application. Dealers also find the front pump seals are very reliable and do not require early replacement.



To design and thoroughly test the new seal, National engineers developed a new transmission simulator which exactly duplicates front pump operating conditions at all car speeds.



Get real help on seal engineering problems. Call the National Engineer.

NATIONAL SEAL Division, Federal-Mogul-Bower Bearings, Inc.
General Offices: Redwood City, California; Plants: Van Wert, Ohio, Downey and Redwood City, California



now you can be sure you get genuine ALEMITE fittings

# only Alemite offers all 4 extra lubrication advantages

- 1. Flat top with clean, dirt-cutting edge bites through dirt and old grease instantly!
- 2. Only Alemite fittings are armor-hard—to resist nicks, scratches, distortion!
- **3.** Tip has rounded contour to give extra working angle . . . coupler won't slip off in tight quarters. Alemite precision engineering!
- 4. Only Alemite fittings have such a widelyaccepted nationally advertised brand name backed by over 38 years of continuous advertising! Made by the leaders in lubrication!

#### Now You Can Tell the Genuine Alemite By the RED BALL

• Instant positive identification. Anyone can see at a glance that it's Alemite! • Permanent, foolproof identification—and it costs no more! • Protection against substitution at every stage! • Insurance against mixups and swapping!



## EFFECT OF INTEGRAL FINNED HEAT TRANSFER PERFORMANCES

In addition to pioneering in the development of integrally-finned condenser tube, Wolverine Tube has also been responsible for coining the various designations used to describe different types of integrally finned tubing. Because of the increasing popularity of Wolverine Trufin®, we are often asked to explain just what these designations mean.

Actually, Wolverine Trufin is available in six different types—each designed for use in specific heat transfer applications. The most widely used is Trufin

Type S/T named by Wolverine to identify its use in shell and tube condensers. Trufin Type S/T is a low finned tube with either 16 or 19 fins per inch (depending on alloy). The ratio of outsideto-inside surface area is approximately 3.75 to 1.

Wolverine also produces Trufin Type W/H, so named because it was designed primarily for use in water heaters. Trufin Type W/H is a high finned tube with 11 fins per inch. It has an outside-toinside surface ratio of approximately 4.75 to 1.

To help the processing industry do a better hydrocarbon cooling job Wolverine developed an all-aluminum Trufin tube with integral fins on the outside and longitudinal fins on the inside. This tube is called Trufin Type I/L (internal longitudinal). It is available with 5, 7, 9, or 11 fins on the outside and has sufficient fins on the inside to approximately double the surface area. In addition to hydrocarbon cooling, Trufin Type I/L is also ideal for air cooling oil or in air-type refrigeration eyaporators.

Trufin Type L/C is a high finned-lightweight aluminum tube mechanically bonded to an interior liner of any metal. Type L/C was designed to economically provide an extended surface tube with a liner core permitting adaptation to a variety of corrosion and/or pressure requirements. Type L/C, too, is ideal for air-cooled operations.

To facilitate insert type end connections by brazing, Wolverine developed an extended surface tubing with a controlled inside diameter-named it Trufin Type H/A (high area). Trufin Type H/A is a high finned tube with an outside-to-inside surface ratio of approximately 8:1. Air or gas flows outside the tube to be heated or cooled. The heating or cooling liquid is passed through the inside of the tube.

Finally there's Trufin Type H/R (high root)—similar to Type H/A. The root diameter is closely controlled and sufficient wall thickness allowed to permit the removal of fins for rolling into tube sheets. Type H/R is a high finned tube -has an outside-to-inside surface ratio of approximately 8:1.

And there, briefly, is a look into the background of integrally finned condenser tubing-a Wolverine development that is becoming more and more important with the passing of each day.



FINS actually

E-X-T-R-U-D-E-D

from the tube wall!

The fact that its fins are part of the tube wall is the secret of the construction of Wolverine Trufin. It's the secret too, of the amazing performance records which Trufin-tubed heat exchange units are hanging up every day.

Because the fins and tube are all one piece, you are assured of constant efficiency. Fins are not impaired by vibration, temperature change or varying pressure. Trufin transfers more BTU's per foot of tube-permits you to design more compact units-steps up the capacity of existing

Trufin is fabricated as easily as plain tube, too. In fact, standard tools and techniques are used. Fabricated Trufin units are often stronger than units using plain tube because fins provide additional support at bends. Remember: You can depend on Trufin for dependable heat transfer!

WRITE FOR CATALOG



BUY WOLVERINE TUBE-IT'S MADE IN AMERICA

#### CALUMET DIVISION WOLVERINE TURE DIVISI

#### WOLVERINE TUBE Division of Calumet & Hesia, Inc.

17250 SOUTHFIELD ROAD . ALLEN PARK, MICH.

dacturers of Quality Controlled Tubing and Estruded Aluminum Shapes

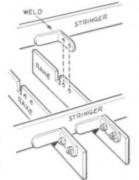
Wolverine Trufin is available in Canada through the Unifin Tube Company, London, Ontario.

PLANTS IN DETROIT, MICHIGAN AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES. EXPORT DEPARTMENT, 13 EAST 40TH STREET, NEW YORK, NEW YORK

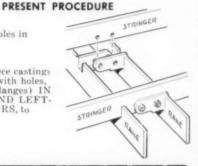
#### PREVIOUS PROCEDURE

- Drill bolt holes in 'clip angles.
- 2 Weld clips to stringer.
- 3 Drill holes in rake blades.
- Mill stringer slots in rake blades.
- 5 Bolt rakes to clip angles.

REPEAT FOR EACH BLADE



- 1 Drill bolt holes in stringer.
- 2 Bolt one-piece castings (complete with holes slots, and flanges) I RIGHT- AND LEFT-HAND PAIRS, to stringers.





Type H rake classifier made by Dorr-Oliver Type H rake classifier made by Dorr-Oliver Inc., of Stamford, Conn., separates solids in liquid-solid mixtures into two fractions according to particle size. Fine materials overflow with liquid at lower end of inclined tank: larger particles settle to tank bottom, are continuously raked up inclined slope and discharged "over top".

Rake blades move in

Rake blades move in oval track due to motion of rocker head, must be precisely aligned to move settled material up to next rake without either scraping or undue



Use of Cooper Alloy close-tolerance shell casting eliminates 3 out of 5 machining operations for Dorr-Oliver rake classifier blades, showing

### How to Cut Fabrication Costs with Close-Tolerance Stainless Castings

Previous method of attachment of rakes to stringers was by "clip angles" welded to stringers, drilled and bolted to simple flat blades themselves drilled and slotted as shown. Construction was expensive, and often unsatisfactory, in that heat of welding tended to put rakes out of alignment.

In redesigning, Dorr-Oliver decided to eliminate the clip angle as a separate third piece by incorporating it into the blade castings. Original conception was to cast rough slots and holes, then mill and drill them to dimensions. Cooper Alloy, after study of the piece, determined that with close-tolerance plastic shell cores, both bolt holes and stringer slots could be cast directly in the rake blade, without need of further machining. Also, that by using right- and left-hand patterns of rake flanges, two rake blades could be bolted to stringers with one set of bolts.

#### Casting requirements stringent

· Bolted face of each of the upright flanges required a smooth finish (250 A.S.A. Standard).

- 11/16" cored holes had to be smooth, accurate to ±.010", and precisely positioned for proper fitting of parts.
- Stringer slots had to be precisely positioned, accurate in dimensions to ±.025"
- Multiplicity of patterns for different widths of rake blades had to be reduced, for economy,

Casting solutions For the critical flange faces and bolt holes, shell "cake" cores, capable of holding pre-

CASTING cise dimensions CLITAWAY EL EVATION



down to ±.016", were prepared. They were inserted and became an integral part of the greensand molds that formed the less critical outer

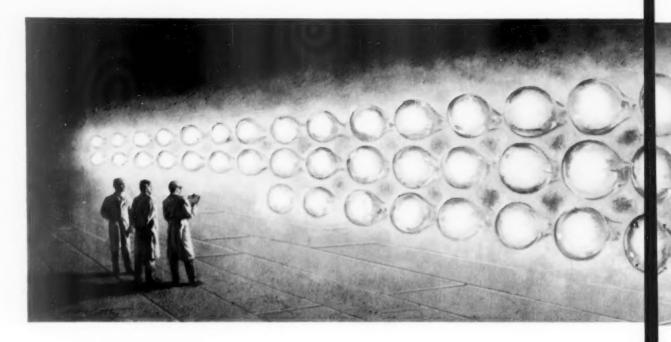
blade areas. To save cost of a complete new pattern for each rake size, all sizes of rake were designed to have the same blade thickness and flange dimensions. Patterns were then made of the narrowest-width blade in each series, loose pattern pieces being added to increase blade width of the larger rake sizes.

Results - "These rake blades", says Dorr-Oliver, "were used directly as cast, with no additional machining of any kind. Dimensions were precise, surfaces smooth, and finished alignment better than with previous 3piece welded assembly. New procedure saves time and handling, and has reduced our manufacturing costs on this piece considerable '

Such economy possibilities are available in almost any shape, no matter how simple, or how "cut-and-dried". Cooper Alloy has specialized for 35 years in achieving such uncommon results in close-tolerance stainless steel castings, and can do the same

To check on it, why not take advantage of our Foundry Engrg. Service? Just send us (without obligation) a blueprint or outline of your problem part, for cost analysis, to: Foundry Products Division, COOPER ALLOY CORPORATION, Hillside, N. J.

For More Information Circle No. 177 on Inquiry Card-Page 17 For More Information Circle No. 178 on Inquiry Card-Page 17-DECEMBER, 1957



### This year Norton will use over

# 533 million KWH to bring



Niagara's Power was tapped by Norton Company in 1901 for economical hydro-electric power. Here electric furnaces fuse huge quantities of alumina into Norton ALUNDUM\* abrasive.

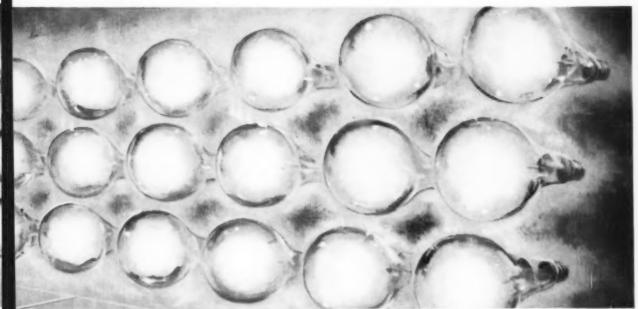


15 HP was News! In 1886 Norton Company astounded New England industry when it installed a 15 HP motor to modernize its manufacture. Last year Norton opened new plants in California, Alabama and three foreign countries to fill industry's needs.



Electric Furnace Products are a natural outgrowth of Norton research in a multitude of materials fused for greater usefulness and versatility. Nineteen Norton laboratories keep up the daily search for better materials. There's the "Touch of Gold" vein in Norton electro-chemical work, too, if you like.

Making better products...



Each Light Bulb represents 10 million KWH used by Norton Company plants throughout the world in making its abrasives and other Norton products in a single year.

# industry the "Touch of Gold"

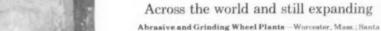
The now famous Norton "Touch of Gold" is no Midas magic. It is much more complex than that. And, of course, infinitely more certain and more lasting.

"Touch of Gold" is a modern expression for describing the value-adding contribution Norton abrasives make to manufacture. Each time a Norton grinding wheel touches a material in process or sharpens a tool that performs a process it makes some product more useful and more perfect and therefore more valuable.

To give the world's industries this "Touch of Gold," you can gauge Norton's resources by the 533 million KWH it will use this year to make its own products . . . which in turn make your products better.

Norton Company is the world's largest producer of abrasives, with the largest research and development facilities in this field.

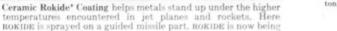




Clara, Calif.; Hamilton, Ontario; South Africa; England; France; Germany; Italy; Brazil. Behr-Manning Plants - Coated Abrasices and Behr-cat Tapes-Troy, N. Y.; Canada; Australia; France; Northern Ireland; Argentina; Brazil. Electric Furnace Plants -Huntaville, Alabama; Chippawa, Ontario; Cap-de-la-Madeleine, Quebec; Brazil. Grinding and Lapping Machine Plant-Worcester, Mass. Refractories and Electro-Products Plant-Worcester, Mass. Norton Pike Plant-Sharpening Stones-Littleton, New Hampshire. Bauxite Mines - Bauxite, Arkansas.

General Offices: Norton Company, Worcester, Mass.





used in many different applications in industry

\*Trade-Marks Reg. U. S. Pat. Off. and Foreign Countries

to make your products better

Only 2 Pounds of Tuffy Sling Per Ton of Load

The slings hoisting this hydraulic press are 1¼" Tuffy U-1s. For each 2 pounds of their own weight, two Tuffy U-1s of this length (basket hitch) are rated to handle a ton of load. Pound for pound Tuffys are weight lifters extraordinary.

The secret of the amazing strength of all Tuffy Slings is in the special purpose steel we use, and the way its wire fabric is machine-braided to give a combination of toughness and flexibility you won't find in any other machine made sling.



Tuffy Slings are so flexible that kinks can be pounded out easily without sling damage. And it's mighty hard to kink a Tuffy Sling in the first place. Tuffy's resistance to knotting, kinking and looping is just one reason why Tuffy Slings have an enviable record of giving longer service life than ordinary slings. For another reason, look at the Tuffy ferrule...



Tuffy's pressed-on ferrule gives the tucked eye splice 100% of fabric strength. Applied under great pressure, the steel ferrule literally flows into every space between the wires and strands, developing friction force equal to fabric strength. Another reason why you can't match Tuffy for taking deadloads, shocks and impacts!

### Your Tuffy Distributor is Stocked to Meet Your Needs

He'll help you save money with the longer troublefree service life of Tuffy Slings. He's ready with your Tuffy Slings and Union Wire Rope needs. Get in touch with him now!



#### FREE— Get Your Tuffy Sling Handbook

Gives complete data on Tuffy Sling types, dimensions, weights and rated loads. Plus a complete rigger's manual and engineer's notebook on wire rope constructions and specifications. Write us for your copy!



Specialists in high carbon wire, wire rope, braided wire fabric, stress relieved wire and strand



# HOW Westinghouse

### JOB-TAILORED FLUORESCENT LAMPS MEET YOUR LIGHTING NEEDS

...all with ULTRALUME™ High-Intensity Phosphors • MORE LUMENS PER WATT...
more light for your dollar • UNIFORM END-TO END LIGHT • PERFECT COLOR
MATCH...ALWAYS • MAXIMUM OUTPUT MAINTAINED THROUGHOUT LONG LIFE

New SUPER-HI Fluorescent lamps produce more than twice the light per foot. Designed primarily for high bay (20 feet or higher) industrial and outdoor lighting, a new line of extra high light output fluorescent lamps produce more than twice as much light output per foot as standard fluorescent lamps. The new SUPER-HI lamps permit extremely high energy loading of electrodes, the arc stream and the phosphor. This gives you high light output with new economy at good efficiency and long life. SUPER-HI lamps are light in weight, convenient to handle and provide a light source subject to the same easy optical control as with present standard T12 lamps, but with over twice the light output. Available in 105, 155, and 205 watts, 4, 6 and 8 ft. The lamps have a rated average useful life of 5000 hours, deliver 6000 to 13,000 initial lumens.

High Output Rapid Start lamps give more than 50% more light than regular type. Designed primarily for medium-high bay (15 to 20 feet) industrial and outdoor lighting, four new sizes of Westinghouse high output, rapid start fluorescent lamps can produce over 50% more light than comparable sizes of regular lamps and offer new economy and effectiveness to fluorescent lighting. These lamps provide increased lighting levels, make installations with adequate footcandle values of deluxe color light more practical, and improve the economy and practicability of fluorescent lighting at higher mountings and at lower ambient temperatures.

These lamps are available in 24", 48", 72" and 96" T12 design for general indoor use and for outdoor service where retention of light output at low temperatures is essential. The 72" T12 is recommended for street lighting.



Reflector-Fluorescent lamps produce 60% more directed light. For use where external reflectors are difficult or impractical to use, or where dirt deposit cuts lighting effectiveness, these Westinghouse Reflector-Fluorescent lamps provide a directional light distribution which helps put the light where you want it. This is accomplished by a built-in reflecting surface, extending the length of the lamp on the inside of the tube, which redirects about 60% extra light out the other side. Westinghouse Reflector-Fluorescent lamps are recommended for use in coves, showcases and other locations where space is limited. Indirect lighting effects may also be obtained by aiming the lamps toward the ceiling.

They also solve special lighting problems including temporary lighting for construction projects, displays, and exhibits.

Westinghouse Reflector-Fluorescent lamps are available in 40 watt rapid start, 48" and 96" T12 slimline types.

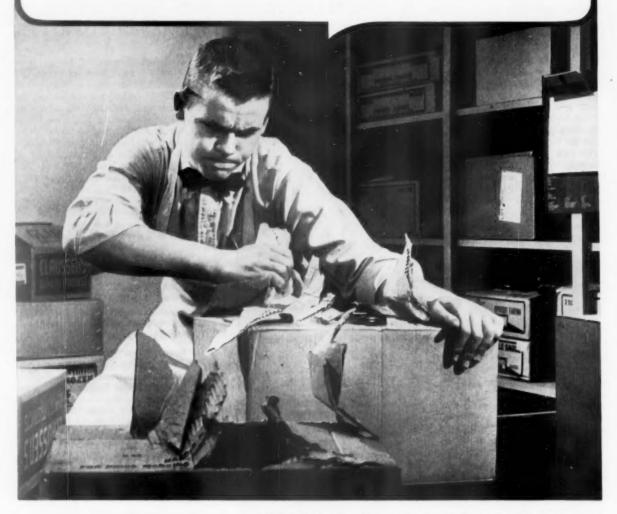
Beauty Tone Home-line Fluorescent lamps with warm white doluxe color. The same new Westinghouse "Beauty Tone Home-line" lamps which are revolutionizing home lighting by providing warm white deluxe illumination are also ideal for offices, stores and wherever "friendly" color of light is wanted to flatter complexion, enhance the natural color of furnishings, decorations, and displays, and blend well with incandescent lighting.

There's a network of Westinghouse distributors ready to serve you. Call your nearest Westinghouse Supplier for a free Job-Tailored Survey of your lighting requirements. Or write Westinghouse Lamp Division, Bloomfield, N. J.

YOU CAN BE SURE ... IF IT'S Westinghouse



Man, it just isn't *safe* to open these cartons. A guy either gets stuck on a staple...or slashes the can when he cuts the carton. The cartons sealed with one strip of reinforced tape—those are the ones I like.



When the convenience of an easy-to-open carton is important to you and when you want super-strong shipping protection, order Glassweb reinforced-with-glass tape. The economy of one pass, one strip sealing means savings in the Shipping Department. The ease of opening will keep customers happy, too. Order Glassweb and let it prove itself.

### GLASSWEB REINFORCED TAPE



CENTRAL PAPER COMPANY . MENASHA, WISCONSIN

# Here is the KEY

aginaw Bern Screws

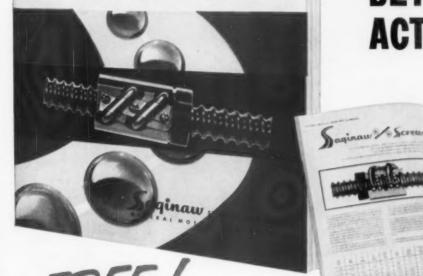
and ball bearing splines

to higher

### VOLUME PROFITS

through

# BETTER ACTUATION!



NEW 1958 ENGINEERING

and STANDARD ASSEMBLIES
PRICE LIST

from world's largest producer of b/b screws and splines



SAGINAW STEERING GEAR DIV., GENERAL MOTORS CORP., SAGINAW, MICH.

#### 7 LOW-COST STANDARD SIZES

36-page book is crammed with helpful facts on b/b Screw Basic Operation • Applications • Advantages • Features Characteristics • Technical Data • Standard Assemblies Couplings • Design Data • Engineering Assistance • Service. Make your volume products easier to produce, operate and sell with Saginaw b/b Rolled Thread Screws—they cost no more and are far more efficient than acme screws!

SEND	FOR	YOUR	FREE	COPY	TODAY
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Saginaw Steering Gear Division, General Motors Corporation b/b Screw and Spline Operation, Dept. 4P, Saginaw, Michigan

Please send 1958 engineering data book on Saginaw b/b Screws and Splines, and standard assemblies price list, to:

NAME

COMPANY\_

TITLE

ADDRESS.

ZONE

STATE

For More Information Circle No. 182 on Inquiry Card-Page 17



### They look like twins... but one is synchronous



Louis Allis "SYNCRO·SPEDE"\* offers...for the first time...a synchronous motor in the same frame sizes as a standard induction motor

New from Louis Allis — the most compact and efficient synchronous induction motor on the market . . . the revolutionary "Syncro-Spede." It's the only synchronous motor built in standard NEMA frames for comparable ratings in any enclosure.

The space-saving "Syncro-Spede" has no external excitation, wound rotating fields, collector rings or brushes—offers simplified control and low-cost operation. And it's virtually maintenance-free.

In performance, "Syncro-Spede" delivers and maintains exact synchronous speed within its rated capacity, regardless of load variations or voltage dips. When "Syncro-Spede" motors of several different ratings are powered by a single adjustable-frequency

source, their acceleration, running speed, and deceleration can be synchronized.

"Syncro-Spede" is the low-cost answer to such demanding synchronous applications as precise adjustable-frequency multi-motor systems...high-frequency generator drives and constant-speed conveyor drives... precision timing and metering devices... recording instrument drives... any system requiring constant speeds from no-load to full-load.

"Syncro-Spede" sizes range up to 100 hp. For information and expert application engineering assistance, contact your nearby Louis Allis District Office or write directly to The Louis Allis Company, 439 East Stewart Street, Milwaukee 1, Wisconsin.

O"Syncra-Spede" is a trademark of the Louis Allis Co.

#### LOUIS ALLIS

MANUFACTURER OF ELECTRIC MOTORS AND ADJUSTABLE SPEED DRIVES

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40

PURCHASING

CUTLERY, TOO.

 Cutlery manufacturers know well the name SHARON, for in the past five decades SHARON has excelled in the production of steels used in the manufacture of implements for cutting.

OUT from exquisite carving blades to rugged chain saw teeth, razor sharp

scalpels, agricultural and earth moving equipment SHARON provides the edge holding and abrasion resistant steels manufacturers can trust.

If you make products that require cutting edges that endure we suggest that you contact the SHARON representative nearest you and take advantage of this vast library of experience.

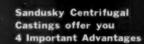
SHARONSTEEL

For 56 Years a Quality Name in Steel

SHARON STEEL CORPORATION, SHARON, PENNA.

### CYLINDRICAL APPLICATIONS:





- 1. Superior mechanical properties to meet exacting design requirements
- 2. Uniform soundness—free from harmful inclusions and porosity
- 3. Highest quality—to insure long, dependable, trouble-free service
- 4. Job ready castings-machined to your exact specifications

More and more design engineers are realizing that new applications for centrifugal castings are *unlimited*... thanks to new knowledge about alloys... new casting and machining techniques and facilities.

From simple bushings to atomic reactor components . . . from bronzes to heat, corrosion, and abrasion resistant stainless steels . . . from 7" to 54" O.D. and lengths to 33 ft.—Sandusky centrifugal castings

are providing gratifying results in scores of applications, many unheard of a few years ago.

What cylindrical or piping problem can we help you solve? . . . Code pressure vessels? . . . Reactor vessels? . . . Power Piping? . . . What is your problem?

Your inquiry will bring more information promptly . . . or, if you prefer, a personal call by one of our engineers.

CENTRIFUGAL CASTINGS

Sandusky Foundry & Machine Company

SANDUSKY, OHIO . Stainless, Carbon, Low Allay Steels - Full Range Copper Base, Nickel Base Allays

# SAFETY SWITCHES STAND UP UNDER 100,000 AMPERE SHORT CIRCUIT TEST!

## INDEPENDENT TESTING LAB RELEASES FINDINGS AFTER GRUELLING "TORTURE RACK" TESTS

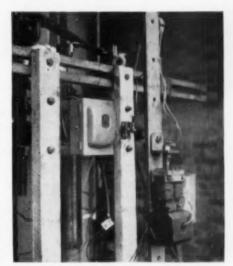
Unprecedented tests have been completed on 30 through 600 ampere rated Square D safety switches equipped with high capacity current limiting fuses. During these tests, switches were closed on a short circuit system delivering up to 100,000 amperes (symmetrical—R.M.S.). In addition, the fault was applied on the closed switches. All switches withstood the shocks without any sign of failure!

#### High Capacity Systems Demand Stamina

High capacity systems capable of delivering tremendous short circuits are becoming more and more prevalent with the growth of electrical loads. Network systems in metropolitan areas are a source of such faults. Another, the heavy industrial areas, with a concentration of sub-stations and rotating machinery. Terrific stresses and heat generated by such faults are serious hazards to both personnel and equipment unless properly contained. That is why proven protection for switching service and feeder circuits is of major concern.

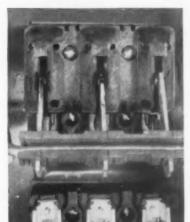
#### Square D Standard Switches Do The Job

These tests offer conclusive proof that standard Square D Type HD and Type ND switches, equipped with high capacity current limiting fuses, can be used on such systems without fear of failure. You pay no premium for the proven performance they offer. Why settle for less?



Square D switch on "torture rack" during test involving up to 100,000 ampere short circuit

#### SUMMARY TABLE \* Extract from Report No. 5/NA R66-Shoot No. 8



Ampara Rating	Voltage Rating	Calaing Number	Average Symmetrical Prospective Current R.M.S.	Recovery Voltage R.M.S.	Maximum Total Arcing Time	Fivon Type
30	250	A85351	96,600	252	.0000	A2Y -30A
30	250	A85351	96,400	253	.0010	FRN-30A
30	600	A86341	107,000	590	.0020	A6Y -30A
30	600	A85341	106,000	601	.0027	FRS-30A
60	250	A86352	96,400	248	.0010	A2Y-60A
60	250	A86352	95,200	262	.0019	FRN-60A
60	600	A86342	106,000	605	.0011	A6Y -60A
60	600	A86342	108,000	598	.0020	FRS-60A
60	600	A86342	107,000	601	.0013	NAS-60A
100	250	A86353	95,200	253	.0000	A2Y-100A
100	600	A86343	108,000	604	.0014	A6Y-100A
200	250	A86354	95,200	253	.0037	A2Y-200A
200	600	A86344	107,000	602	.0011	A6Y-200A
400	250	A86355	95,900	252	.0039	A2Y-400A
400	600	A86345	106,000	611	.0060	A6Y-400A
600	250	A86356	94,500	251	.0062	A2Y-600A
600	600	A86346	107,000	601	.0062	A6Y-600A

SQUARE D
SAFETY
SWITCHES
GIVE YOU

Certified
PERFORMANCE!

Above • Extract of Nelson High Power Laboratory Report C/NA-66

At  $left \cdot No$  sign of failure in this switch interior after 100,000 ampere short circuit test

EC&M HEAVY INDUSTRY ELECTRICAL EQUIPMENT... NOW A PART OF THE SQUARE D LINE



SQUARE D COMPANY

What you should know about "manufacturer's joints" in Union Boxes.

### Which corner of a box

One corner is more important than the rest: where your corrugated shipping container is held together. This "hinge", or manufacturer's joint, often holds the key to your box's performance.

As the illustrations show, manufacturer's joints comprise three basic types: taped, stitched, and glued-lap. Each does a special job. Knowing which to use, and when, calls for a detailed analysis of your product and how it will be shipped.

Union Box engineers will be glad to make such a study for you. This is part of Union's complete structural design service. These fundamentals, however, are excellent guides:

#### Many shippers prefer tape

Tape is generally gumbacked, reinforced kraft paper or cloth, having high tear strength, especially in the lengthwise direction. Tapes are 2, 2½ and 3



Taped Joint (outside)

inches wide and come in varying grades depending on degree of strength required.

### should you examine first?

Advantages: no projections. In stacking, boxes lie flat, rock less. Also, entire interior area of box can be used. The taped joint is continuous, too . . . seals out dust and dirt. And it folds to make a true box corner.

On the other hand, tape is frequently more expensive than other manufacturer's joints. It can be adversely affected by moisture also. In some cases, tape may interfere with printing.

#### The sturdy stitch

Frequently used for heavy items like canned goods, this joint uses steel staples driven

from the outside of the box panel. It is probably the strongest "hinge", gives the most positive closure, and is not affected by moisture or cold. It is usually the least expensive.



Stitched Joint

The closure, however, is not continuous. And, since the metal stitches may protrude inside the box, this joint is normally not recommended for fragile and prone-to-scratch articles.

The diagonal stitched joint shown is a typical arrangement. Others include vertical, horizontal, and double stitching.

#### Glued lap...the versatile joint

Flap may be adhered either to the inside or outside of the box, and to the end or side panel. Inside-flap gluing is the most popular. It is the only joint which leaves a completely uninterrupted exterior printing surface.

Like the taped joint, the glued lap joint is continuous . . . forms a true fold. Performance under adverse moisture conditions is questionable. Also, insidelap does not give 100% Glued Lap Joint clear inside-packing area.



(inside)

Take full advantage of Union's accumulated knowledge in constructing and recommending manufacturer's joints for shippers in every industry. Consistently well-engineered features such as these offer the surest protection for your product and your shipping investment.



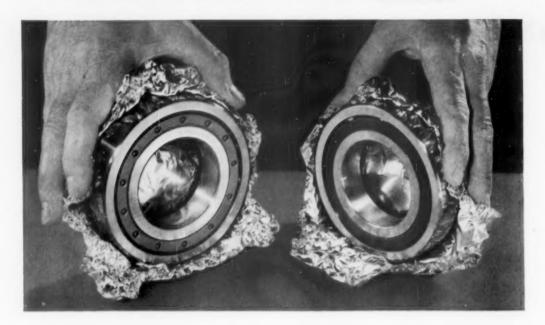
Write for Union's free, informative booklet "Manufacturing Corrugated Boxes."

UNION. BAG-CAMP PAPER Corporation 233 BROADWAY, NEW YORK 7, N. Y.

Factories: Savannah, Ga.; Trenton, N.J.; Chicago, Ill.; Lakeland, Fla.

Sales Offices: Eastern Division—1400 E. State Street, Trenton, N.J.
Southern Division—P.O. Box 570, Savannah, Ga.; P.O. Box 454, Lakeland, Fla.
Western Division—4545 W. Palmer, Chicago, Ill.

# WHICH BEARING IS RIGHT FOR YOU?



### Play it safe! Do business with an AUTHORIZED FAFNIR DISTRIBUTOR

The important difference between these bearings is inside. The bearing on the left has a bronze retainer while the other has a lightweight composition retainer for higher speed applications.

As is often the case with bearings, this difference in design isn't readily apparent. Yet such refinements are vital to proper machine performance and trouble-free service. That's why it pays to do business with an <u>Authorized Fafnir Distributor</u>.

Your Fafnir Distributor is a bearing specialist. He handles various bearing lines . . . is able to give you unbiased advice on what bearings will best meet your requirements. He is also qualified to help you on bearing problems. The expert technical services available to you through your Fafnir Distributor are an important plus you get wherever you find the Fafnir sign.

Your Fafnir Distributor maintains stocks of the latest manufacture and design. By ordering from him, you avoid the risk of equipping with obsolete bearings, that are "second best" substitutes for the job at hand.

For the most effective and cooperative help in bearing selection, supply, and service, see your <u>Authorized</u> Fafnir Distributor.

The FAFNIR BEARING COMPANY, New Britain, Connecticut

### Whatever you want . . .



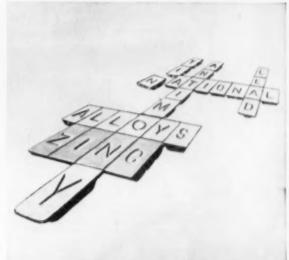
in solders and fluxes



in high purity zinc alloys



in lead-lined equipment



in tin, lead and other metals

# National Lead's got it!

National Lead has what you want...has the metals...has the fabricating facilities... has the laboratories, the technical specialists ...has the national network of plants and warehouses...has the resources and resourcefulness to handle your business in lead and lead alloys, zinc alloys, solders and fluxes, babbits, fabricated lead products, lead and



lead-lined vessels, valves, fittings and pipe.
That's why it's simpler, faster and more economical to place your orders with NATIONAL LEAD COMPANY.

National Lead Company General Offices: 111 Broadway, New York 6, New York. Offices in principal cities.

For More Information Circle No. 189 on Inquiry Card-Page 17



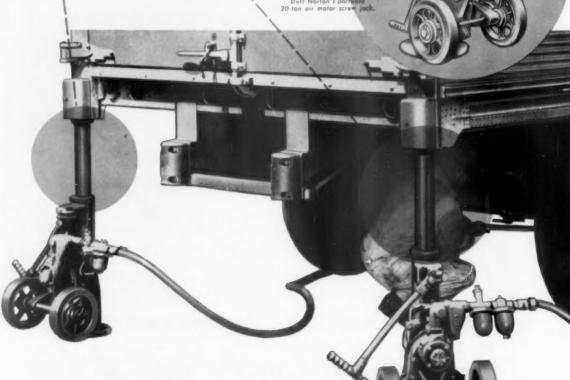
#### STRENGTH PROBLEM SOLVED with Ostuco Steel Tubing

Duff-Norton Company, Pittsburgh, manufactures a portable 20-ton air firstor screw jack now finding wide acceptance as a maintenance tool by the trucking industry because of its versatility, dependability, and rugged strength.

Designing this jack, Duff-Norton engineers were concerned with selection of proper material for the "Standard"-crucial part which extends to support full load weight. Seeking a material that would not fail, even under eccentric loads, Duff-Nonton specified Ostuco Seamless Steel Tubing for this critical application.

Strength is just one of the plus factors of Ostuco Steel Tubing. For details on all the advantages, contact your nearest Ohio Seamless Sales office or write direct to Shelby, Ohio.







OSTUCO TUBING

MANUFACTURED IN SHELBY, OHIO EXCLUSIVELY BY

OHIO SEAMLESS TUBE DIVISION

OF COPPERWELD STEEL COMPANY

SHELBY, OHIO . Birthplace of the Seamless Steel Tebe Industry in America SEAMLESS AND ELECTRIC-RESISTANCE WELDED

STEEL TUBING . FABRICATING . FORGING

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Rochester \* Salt Lake City \* Seattle \* St. Louix \* St. Paul
St. Peterburg \* Tulsa \* Wichita
CANADA: Railway & Power Engr. Corp., Ltd.
EXPORT: COPPERWEID STEEL INTERNATIONAL COMPANY,
225 Broadway, New York 7, New York

# take color



### and you put Synthane laminated plastics to work



Slide for cut film holder-made from Synthane sheet because Synthane is opaque to infrared rays.

At first glance the connection between color photography and Synthane laminated plastics may seem obscure. Actually, Synthane has long been at home in the manufacture and processing of film and in the developing of the

finished picture.

Many types of rolls, loop sticks, and structural parts made of Synthane are used by the film manufacturer. Racks, film sprockets, reels and rollers em-ploy Synthane in developing proc-esses. In the infancy of color pictures (and ever since), racks and reels made of Synthane proved to be exactly what were needed to resist developing solu-tions, prevent film fogging through contamination. Film holder slides and

various parts for cameras are other uses of Synthane in photography.

The photographic industry needs Synthane for its unique combination of properties. Resistance to moisture and chemicals, non-fogging qualities, its hard, smooth surface are all important characteristics. Synthane is tough, light in weight of light in weight (half the weight of aluminum) and easily machined. These and many other chemical, electrical and mechanical properties make Synthane valuable throughout the length and breadth of industry.

Over 30 grades in sheet, rod or tube form or completely fabricated by us are looking for work with you. Write for

information.



CHEMICAL RESISTANCE



LIGHT WEIGHT



EASILY MACHINED



MECHANICAL STRENGTH



. industry's unseen essential

SYNTHANE CORPORATION, 7 RIVER ROAD, OAKS, PA.

For More Information Circle No. 191 on Inquiry Card-Page 17

Brainard SOLVE THE BUYING
PUZZLE FOR
STRAPPING BUYERS

MAINE

Strapping Warehouses

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Brainard's strapping warehouses strategically placed throughout the United States insure quick delivery of tensional and heavy duty strapping as well as tools and other strapping supplies.

For this reason, small to medium sized industries that buy in relatively small quantities have found that Brainard's service and delivery are topped only by the quality of their product.

Brainard Steel Strapping

Brainard Steel Division, Sharon Steel Corporation Griswold Street, Warren, Ohio

For More Information Circle No. 192 on Inquiry Card-Page 17

SHARONSTEEL

445



Greater flexibility. A 5000 lb. capacity truck with a 648 amp-hr new TG Exide-Ironclad battery. Same truck could hold a 936 amp-hr battery for increased work capacity if needed. Or the 648 amp-hr battery could also be used on a truck as small as 2000 lb. capacity. This flexibility is possible only with Exide's exclusive new TG battery.

# NEW TG EXIDE-IRONCLAD BATTERY PACKS SAME POWER IN SMALLER SIZE FOR LOWER COST

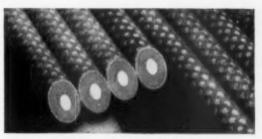
### Improved design gives more power and life per dollar. Superior peak-load performance.

Here's the kind of battery economy that really counts: more power and life per dollar. The TG Exide-Ironclad is the most advanced and economical battery ever built for electric industrial trucks.

Every plate packs more power; fewer plates are required to perform a given duty cycle. That means you get a more compact battery with the *standard 22*½ in. height. It also means that, for a given capacity, the new TG costs you less. TG's armored porous tubing prevents practically any loss of active material; so even greater economy is gained as a result of its long, dependable service life.

More work from your trucks. The compactness of the TG means you can install more power in your trucks—thus, get more work from them. For a given size truck, TG can give you up to 44% more power than batteries you might otherwise use.

Only Exide offers you so much. When you order new batteries, get all the power, performance and life your dollar can buy. Get TG EXIDE-IRONCLAD. For full particulars about the extra productivity and longer life of the new battery, call your EXIDE Sales Engineer, or write Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 2, Pa.

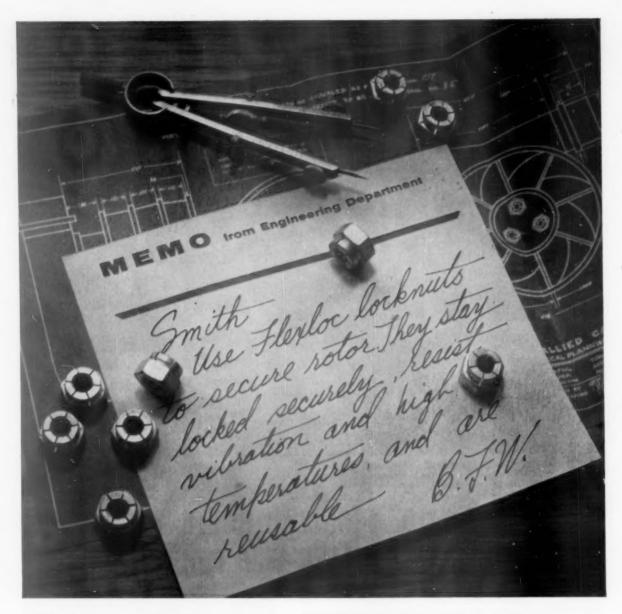


New, more porous armored tubing for positive plate. Eases current flow. Holds more active material. Boosts battery power, Corrosion resistant Silvium\* grid insures long plate life.

\*Exile\*: potential grid allay.



For More Information Circle No. 193 on Inquiry Card-Page 17



### Vibration won't loosen FLEXLOC self-locking nuts

Where products must be reliable... must stand up under vibration, temperature extremes and hard use . . . designers specify rugged, reliable, precision-built FLEXLOC self-locking nuts.

#### HERE'S WHY:

FLEXLOC locknuts are strong: tensile strengths far exceed accepted standards. They are uniform: carefully manufactured to assure accurate, lasting tocking action. And they are reusable: repeated removal and We also manufacture precision titanium fosteners. Write for free booklet.

replacement, frequent adjustments, even rough screw threads will not affect their locking life.

Standard Flexloc self-locking locknuts are available in a wide range of standard sizes, types and materials to meet the most critical locknut requirements. Your local industrial distributor stocks them. Write us for complete catalog and technical data. Flexloc Locknut Division, STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.

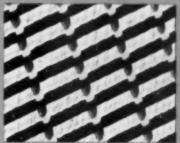
STANDARD PRESSED STEEL CO.

FLEXLOC LOCKNUT DIVISION





### NICHOLSON'S NEW ALL-PURPOSE MACHINIST'S FILE



If you haven't tried the new Magicut, you've missed a very unusual new file. It's a Machinist's file—with a brand new kind of teeth. The teeth are Penetrating Planer-Type. They're created by using steep-angled serrations to get lots of narrow chip breakers.

Magicut is super-efficient. It works its magic on whatever industrial metals you use—cuts quickly by biting into the material being filed then leaves a smooth finish. Stock removal and smoothing are made easy with the new Magicut. It roughs and smooths—in one operation. You can get this fine new file in Flat, Half Round and Square shapes in sizes shown at right.

Ask your Industrial Distributor to show you the Magicut. You'll like this new file—and your Distributor can supply it to you quickly from his complete line.

Copyright 1957, Nicholson File Co.

Which of these sizes can you use?

#### MAGICUT FLAT

8-inch 12-inch 10-inch 14-inch

#### MAGICUT HALF ROUND

8-inch 12-inch 10-inch 14-inch

#### MAGICUT SQUARE

8-inch 12-inch 10-inch 14-inch

For other fine files, see overleaf



NICHOLSON FILE COMPANY, 100 ACORN ST., PROVIDENCE, R. I.

(In Canada: Nicholson File Company of Canada Ltd., Port Nago, Outer

NICHOLSON and BLACK DIAMOND FILES

### X.F. SWISS PATTERN FILES precision-made for precision workers





X.F. Swiss Pattern files are the kind of tools skilled workers appreciate because the craftsmanship we put in them shows in the way they feel and the results they give. There are no finer files.

They're made to precise measurement. Their shapes are results of long study by Nicholson researchers. You can get X.F. (Extra Fine) Swiss Pattern files in dozens of shapes and sizes for precisely the job you want to do well. And you'll get 12 perfect files in every dozen.

### ROTARY FILES and BURS made by Nicholson for every power filing purpose





Hand Cut Hi-Speed Steel, Ground Hi-Speed Steel Burs and Ground Carbide Burs-you can get them all with famous Nicholson design and attention to manufacture.

We make a wide variety of styles and shapes for every power filing purpose calling for rotary files. If you can't find the standard style you need, let us know and we will work with you to create one.

Your Industrial Distributor maintains complete selections of Nicholson rotary power files of all kinds. He'll gladly help you choose the right file for your job. Always specify Nicholson for the best results and lowest cost.

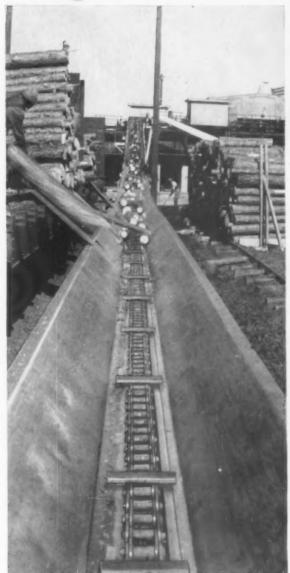


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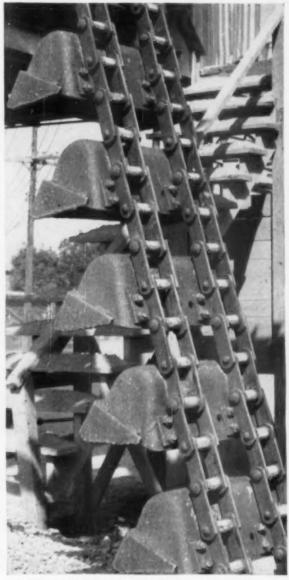


NICHOLSON

# Long life runs in this chain family"



BRUTE PUNISHMENT from thousands of pulpwood logs dropped from railcars is shrugged off by Link-Belt C-class chain conveyor. Pusher attachments are also designed by Link-Belt.



CARRIED 375,000 TONS OF STONE. Long past the life of previous chain (60,000 tons), Link-Belt Class SS bushed chain is still good for a long stretch of service.

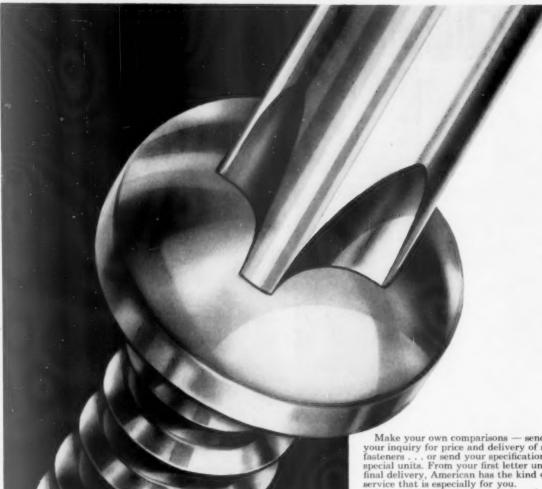
#### How Link-Belt designs, manufactures, and applies chain, to improve drive, conveyor and elevator performance

What's behind the remarkable chain performance reported by so many Link-Belt users? Unequalled metallurgical and design development . . . plus over 80 years of manufacturing and application experience—these are the bases of any recommendation from the world's most complete line of chains

and sprockets. Do you want help in selecting the right long-lived chain for the job? Contact your nearest Link-Belt office or Authorized Stock-Carrying Distributor.

LINK- BELT

LINK BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1, To Serve Industry There Are Link Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities, Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs, Representatives Throughout the World.



### At your Service ... AMERICAN is the name!

SCREWSTICK, another American development, enables power driving to replace individual handling hard-to-manage small screws h a cost saving of 4 to 1.



TRAFFITTERS

Make your own comparisons - send make your own comparisons — send your inquiry for price and delivery of stock fasteners . . . or send your specifications for special units. From your first letter until final delivery, American has the kind of service that is especially for you.

It is this interest in your needs and requirements that gives American an extra plus in each of the four main factors that govern your true fastener costs!

1. Price 2. Service 3. Quality 4. Research

#### American Gives You More of All Four

More in quality . . . with regular dimensional and physical inspections plus 30-minute exactness checks.

More in research . . . with important, new cost savings for you in your assembly and tooling, by the company that developed the original Phillips fastener.

More in service . . . with "in-stock" items in key locations in a full range of sizes and styles.

You may find local price differences occasionally, but nowhere will you get more

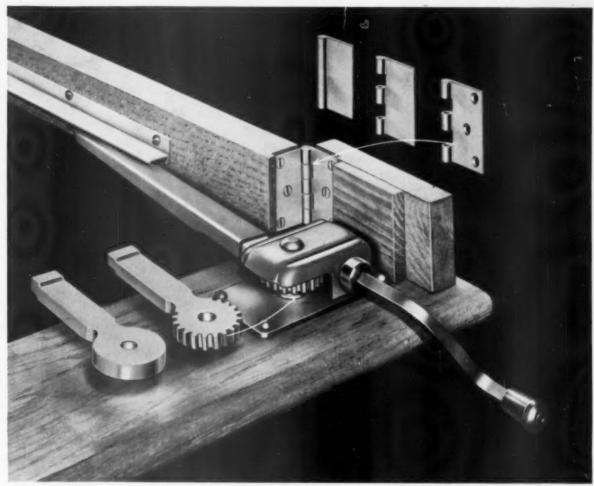
of all four than at American.

When you send your inquiry, be sure to ask for American's stock list.

AMERICAN SCREW COMPANY WILLIMANTIC, CONN. CHICAGO, ILL. . DETROIT, MICH.



merican



DEMONSTRATION UNIT for the Casement Window Operator, a product of The H. S. Getty & Company, Inc., subsidiary of Trans Continental Industries, Inc. At left an still is Anaconda Die Pressed Forging for the operating arm gear. To its right is the finished part after trimming operations around circumference of gear head and in the hole—and hobbing teeth in. Upper right, hinge blank cut from long mill length of an Anaconda Estruded Shape—blank with slots milled and prinholes drilled in knuckles—finished hinge leaf.

# How Anaconda die pressed forgings and extrusions cut costs for Getty\*

Forgings save 30%. The H. S. Getty & Company, Inc., Philadelphia, is a leading manufacturer of marine, window and builders' hardware. They used to fabricate the operating arm gear for their casement window operator (above) from a leaded sheet brass stamping. The American Brass Company suggested a switch to die pressed forgings. Getty tried it, doing a trimming operation in the hole and periphery of the head—then hobbing in the teeth. Metal saving on each unit was 7 ounces. Machining was cut 10%—for an over-all saving of 30%.

Extruded shapes cut machining and finishing. The illustrations above right show the steps in fabricating Getty butt hinges from an Anaconda extruded shape. This short cut to a superior product gave Getty a simplified shop production routine that eliminated several costly machining and finishing operations — because the extruded shape has the exact cross section of the finished hinge. And, because of the dimensional accuracy of extruded shapes, each part is readily adaptable to drill jigs and milling fixtures. These precision

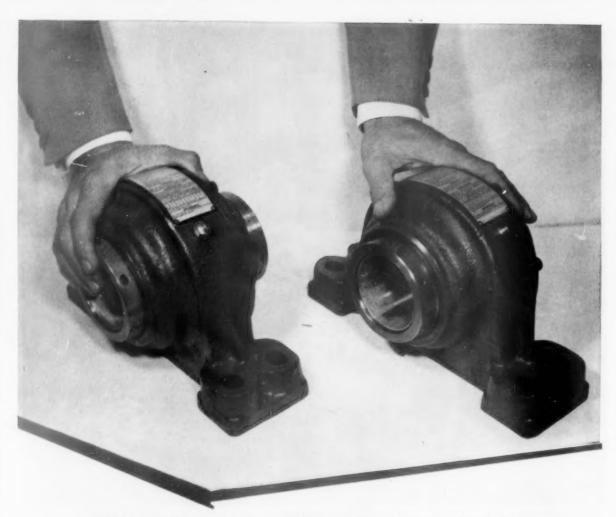
hinges will perform well, too, because extruded metal is wrought metal - tough, strong, and dense-grained.

Find out how Anaconda short cuts can help you. If the production possibilities of die pressed forgings or extruded shapes look promising to you, send us a sketch, sample, or description of each part you have in mind. We'll be glad to tell you about costs — and about possible savings, too. Address: The American Brass Company, Waterbury 20, Connecticut.

\*Subsidiary of Trans Continental Industries, Inc.

# ANACONDA® DIE PRESSED FORGINGS EXTRUDED SHAPES

MADE BY THE AMERICAN BRASS COMPANY



### There's a big difference in these pillow blocks . . . Bearings, Inc. knows the difference. Do you?

One of these pillow blocks contains a non-expansion or "fixed" bearing unit. The other is an expansion or "floating" bearing. Mix them up-order a "fixed" bearing where conditions dictate an expansion unit-and you are in trouble. Bearing failure in a very short time is almost certain.

One of our customers recently ordered spare bearings for new coal handling equipment and overlooked that important difference. They allowed us to check their survey of

bearing requirements against the actual bearings installed on the equipment. We found on many applications "floating" units were required and their order failed to specify this vital point. Savings in time, trouble and money for our customer by this simple check were important.

Let us help you survey your bearing requirements-let us check the actual bearings in your equipment and we will be ready with the correct bearings you need when you need them. Call or write our branch nearest you now!

Providing bearing service in the north> BEARINGS, INC.

and

OHIO: Akron \* Canton \* Cincinnati \* Cleveland \* Columbus \* Dayton \* Elyria \* Hamilton \* Lima \* Lockland \* Mansfield \* Toledo \* Youngstown \* Zenesville INDIANA: Ft. Wayne \* Indianapolis \* Muncie \* Terre Haute \* PENNSYLVANIA: Erie \* Johnstown \* Philadelphia \* Pittsburgh \* York ington • Parkersburg • Wheeling • NEW JERSEY: Camden
MARYLAND: Baltimore • DELAWARE: Wilmington

in the south>

Jacksonville · GEORGIA: Atlanta · KENTUCKY: Louisville · LOUISIANA: Baton Rauge · New Orleans S. CAROLINA: Greenville . TENNESSEE: Chatt

For More Information Circle No. 199 on Inquiry Card-Page 17 For More Information Circle No. 200 on Inquiry Card-Page 17-PURCHASING

### **Mechanize your Thread Gaging**

Blectrolizing gives extra

"Life-Value" to your thread gaging — adds substantially to accurate wear life, many report up to three times or more. Costs little extra.

Plus minimum friction, high degree of corrosion resistance.



Adjustable Thread Ring Gages can be used with the Rotochek to mechanize inspection of externally threaded parts.



Carbide Thread Plug Gage wears far longer under conditions of abrasion or day-in, day-out repetitive gaging. From #8 screw machine size up.



fastest thread gaging device. Available in bench or flexible shaft models. Uses standard ring and plug gages.

Get the Facts on Mechanized Gaging!

Let T-P prescribe the one best combination of speed, wear-resistance, accuracy and simplicity for your program. Get stamted, today, towards a new look at your gaging system. For complete details, write: Taft-Peirce Mfg. Co., Woonsocket, Rhode Island. with

TAFT-PEIRCE ROTOCHEK®

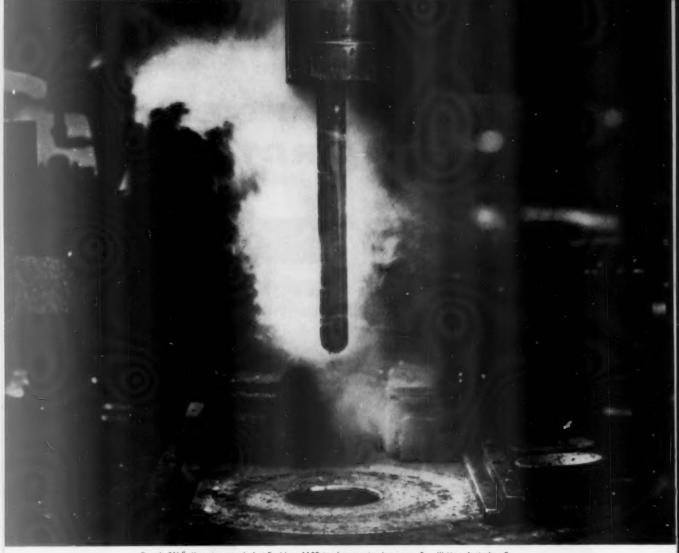


This Taft-Peirce Gaging System
brings remarkable speed and savings to your whole
inspection program. Threads can be gaged three times
faster with the T-P Rotochek. Power does the rotating
automatically instead of by hand — a simple push-pull and the
part is checked. But look further, too. Standard gages—
thread plug (taper shank and reversible) and thread ring gages
can be used with Rotochek to cut costs at almost
every step in your inspection.

TAKE IT TO TAFT-PEIRCE

TAFT-PEIRCE MANUFACTURING COMPANY
WOONSOCKET, RHODE ISLAND

T-P Means TOP Precision



Tough 21/2" diameter mandrel at Rc 44 on 1150 ton brass extrusion press. Scovill Manufacturing Co.

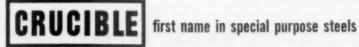
### Mandrel of HALCOMB 218 retains toughness and hardness at hot work temperatures...

This mandrel is made of Halcomb 218-a tough, air-hardening hot work steel. Halcomb 218 is suitable for tools like this which require a higher degree of toughness at moderately elevated temperatures than is obtainable with the tungsten types of hot work steels. And Halcomb 218 retains both its hardness and strength at these temperatures.

For example, at a hardness of Rc 44, Halcomb 218's Charpy Impact Strength is 33 ft-lbs at 500F. And it will retain this hardness after 1 hour, after 10 hours and even after 100 hours at temperatures up to 900F.

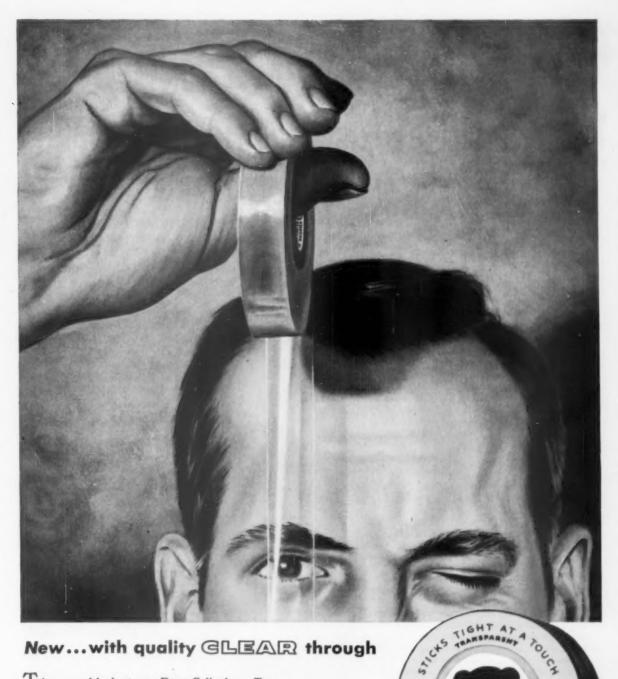
Properties like these cut tooling costs. The mandrel shown above is good for 1200 pushes, for example, and even then all it needs, usually, is repolishing before being used again.

Halcomb 218 is particularly useful for all hot work operations on which drastic coolants are used. It even resists breaking very successfully when water cooled in operation. If these sound like advantages you can use, call your local Crucible representative for more complete data. Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.



Crucible Steel Company of **America** 

Canadian Distributor - Railway & Power Engineering Corp., Ltd.



#### New...with quality GLEAR through

Take a good look at new BEAR Cellophane Tape. A brand new brand . . . with typical Behr-Manning quality. BEAR transparent cellophane tape pulls easily off the roll ... sticks tight at a touch ... is sparkling clear - and stays that way. It's another case of balanced adhesives at work.



BEHR-MANNING CO. TROY, N. Y. A DIVISION OF NORTON COMPANY.

BEHR-MANNING PRODUCTS: Coated Abrasives • Sharpening Stones • Pressure Sensitive Tapes
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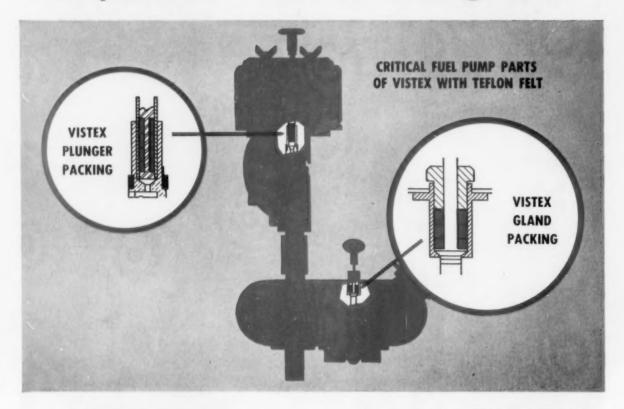


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In Canada: Behr-Manning (Canada) Ltd., Brantford. For Export: Norton Behr-Manning Overseas Inc., Troy, N. Y., U.S.A.

# VISTE WITH FELTS

### for positive ... self-lubricating seals



#### Are dependable seals your problem?

Here's a new way to solve even the toughest ones... American's Versatile Vistex-with-Teflon Felts!

Felted of Teflon reinforced synthetic fibres, these advanced-type, self-lubricating Felts are setting new performance standards under both high and low temperature operating conditions. They resist all acids, alkalis, aliphatic and aromatic compounds...maintaining their thermal stability in applications up to 420°F!

You get better, stronger seals ... Vistex-with-Teflon Felts withstand up to 5,000 psi...eliminating troublesome lateral plastic flow and sealing on polished or irregular surfaces with only minimum pressure.

Vistex-with-Teflon Felts can be precision cut without ravelling or fraying...having a very high tear value. Due to their great strength they are reusable for even greater economy.

Available in 36" x 36" sheets with thicknesses of 1/16", 1/32", 1/64" or as cut gaskets, strips and washers...quality Vistex-with-Teflon Felts can economically and efficiently meet your specific requirements.

Save time—consult our engineering staff for assistance in choosing the correct Felt. Remember: It's the largest, most experienced staff in the industry...and it's backed up with the largest, most modern laboratory facilities in the industry.

Write today for technical Bulletin VT-2-856...on your company letterhead, please.

#### OTHER VISTEX FELTS BY AMERICAN

In addition to Teflon, Vistex Felts are also impregnated with such polymeric compounds as:

#### HYCAR . NEOPRENE . BUNA S NATURAL RUBBER . RED NEOPRENE

... to meet individual chemical and physical conditions.

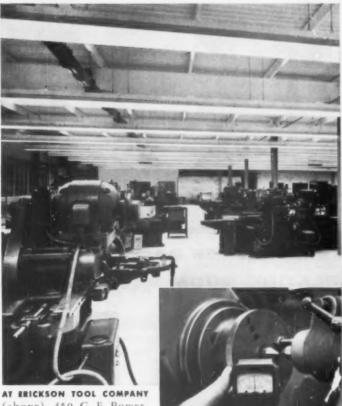
Shouldn't you investigate the advantages of these Felts, too? They are already being used in thousands of difficult applications throughout every major industry.



General Offices and Engineering and Research Laboratories 74 Gleaville Road, Glenville, Conn.

# The Powerful Power-Groove!

General Electric's radical new fluorescent lamp design can give you higher, more economical light levels



(above), 450 G-E Power-Grooves, eight feet long, mounted 10 feet high, with 10 feet between rows, maintain a lighting level of 160 footcandles economically. This means

there is plenty of light right at the machines (see footcandle reading at right)—where extra light means extra safety, extra accuracy for workers. No supplementary lighting is needed. Powerful Power-Grooves do it all!

Progress Is Our Most Important Product

GENERAL (%)



While plans for their new building were still in the early stages, officers from Erickson Tool Company of Cleveland, Ohio, visited the Lighting Institute-General Electric's lamp headquarters at Nela Park. There they saw the whole array of lighting methods and discussed the powerful new G-E Power-Groove Lamps.

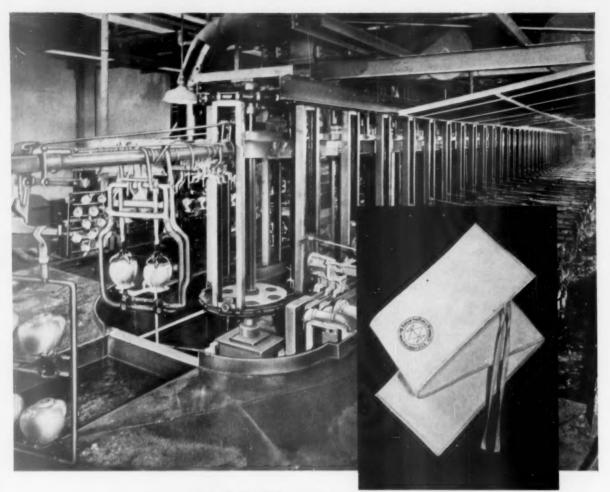
They were shown how these revolutionary lamps provide outstanding general lighting, making it unnecessary to use supplemental lighting on individual machines (like that used by Erickson toolmakers in their old plant). They saw how powerful Power-Grooves would fill a plant with pleasant light that's easy on the eyes . . . as well as the pocketbook. The decision was made: Erickson's new plant would have G-E Power-Groove Lamps throughout!

Because G.E Power-Groove Lamps give nearly twice as much light per tube as High-Outputs - 21/2 times as much as 8-foot slimlines-you can get more light per fixture-with fewer parts to maintain. And compared to other fluorescent systems, you can save 5-20% on your initial investment.

Get the whole exciting Power-Groove story. Write General Electric Co., Large Lamp Dept. P-127, Nela Park, Cleveland 12, Ohio. Better still, visit Nela Park and let us show you on-the-spot demonstrations of how the powerful Power-Grooves can work for you ... economically.



WORLD'S BRIGHTEST WORKSHOP-Now you can see powerful Power-Grooves in action . . lighting the world's brightest workshop. It's at the G-E Lighting Institute at Nela Park. Plan to visit it and see for yourself.



## WHY H-VW-M ANODE BAGS CAN CUT DOWN PLATING ROOM REJECTS

Everything that goes into the plating bath has some effect on the finished product. And, when you think about it, nothing can have a more direct effect on plating results than the bag that holds the anode. You may use the finest chemicals . . . the best anode stock. Yet the job can be ruined by harmful chemicals in the bag material, or made less efficient by a bag of inadequate design.

THAT'S WHY IT PAYS to get H-VW-M anode bags. They cost no more, yet each is designed like a fine tool . . . engineered to give top performance in specific plating operations. This fine

quality and precise engineering pays off in faster work, finer finishes—and fewer rejects.

Look for these features when you buy anode bags. You get them all with H-VW-M.

- Wide selection of materials.
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- Completely desized and pre-shrunk fabrics.
- No organic impurities of any kind.
- Minimum wear . . . longer life.
- · Low, competitive price.

#### MADE ONLY OF LABORATORY-TESTED MATERIAL

You can be sure that every H-VW-M anode bag you buy is free from any matter which can prove harmful in the plating process. In modern H-VW-M laboratories, experts in plating chemistry constantly test anode bag materials under actual shop conditions. Only the purest pass these rigid tests. For diaphragm operation — H-VW-M can supply you with equipment to meet your needs. Write today for further information and prices.

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PLATEMANSHIP—Your H-VW-M combination of the most modern testing and development laboratory—of over 80 years experience in every phase of plating and polishing—of a complete equipment, olies process and supply line for every need.

### Your IMPERIAL DISTRIBUTOR can help you



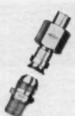
### IMPERIAL HI-SEAL® BUTT-JOINT FITTINGS

Foolproof assembly! No need to spring tubing. Permit closer tube bonds. Withstand high pressures. Meet J.I.C. and A.S.M.E. standards. For 1/2" O.D. tubing. Steel and strainless steel.



#### IMPERIAL HI-DUTY® FITTINGS

Save 36 to 77% installation time. Withstand severe vibration, Brass and aluminum,



### IMPERIAL J.I.C. 37° FLARE FITTINGS

Withstand high pressures and severe operating conditions. Brass, steel, stainless steel.

# SOLVE TUBE CONNECTION PROBLEMS IN A HURRY!



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No flaring, threading, welding or soldering. Make safe connections that withstand high pressure and vibration. Steel.



#### IMPERIAL FLEX® FITTINGS

The brass tube coupling with the vibration and shock-absorbing sleeve. Withstands miner tube movement. Also Nylo-Flex Fittings for nylon tubing.



#### IMPERIAL POLY-FLO\* FITTINGS

For polyethylene or other plastic tubing. Finger tightened only. Save time and labor. Brass.



#### IMPERIAL NYLO-SEAL\* FITTINGS

Made of DuPont Zytel. Economical, corrosion resistant. Save up to 90% compared to stainless steel fittings.



### IMPERIAL COMPRESSION FITTINGS

For low pressure work. Simple, efficient, economical. Brass.



#### IMPERIAL S.A.E. 45° FLARE FITTINGS

Heavy-duty or standard types. Withstand severe tensile pull and high pressures. Brass.

IMPERIAL offers industry's most complete line of fittings for connecting steel, stainless steel, copper, aluminum and plastic tubing



### IMPERIAL INVERTED-FLARE FITTINGS

Similar to standard flore fittings, only flore seat is inside body. Brass.



## IMPERIAL PRESSURE HOSE and REUSABLE COUPLINGS

For high, medium and low pressure use: hydraulic fluids, gasaline, oil, diesel fuel, grease, water, air, LP-gas.



### FLUID CONTROL and SHUT-OFF VALVES

A wide range for many purposes. Plug, needle and diaphragm types. 2-, 3-, and 4-way styles.

TUBING TOOLS TOO! Imperial offers you industry's most complete line for working copper, steel, stainless steel, aluminum and plastic tubing!



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Lever, gear and spring types.



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All types for making 45° and 37° flares — single and double flares.



#### IMPERIAL TUBE CUTTERS

For tubing %" to 2\%" O.D.



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\* T.M.

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### Classic decorated porcelain simulated for the first time in

# NEW MELAMINE Schlitztap



NEW "SCHLITZTAP" consists of three melamine parts – handle collar, color band, and decorated section. These are assembled on a threaded aluminum rod and held between an anodized aluminum shank and crown. This striking draught-beer sales aid stands a handsome 12" high, carries two gay, five-color village street scenes. It looks like the finest bone china

# "Fused-in" decorations now possible on complex shapes, says Chicago Molded... and here's how it's done:

The design and production of the beautiful new "Schlitztap" is the result of more than two years of intensive research by the Jos. Schlitz Brewing Co., and by Hammer Bros., Inc. A solution to the complex problems involved in molding the tap handles was provided by Chicago Molded who engineered and molded the plastic parts.

A milestone in plustics technology, the "Schlitztap" represents the first time that a compound curved melamine surface has been decorated on a production-line basis. And with this type of decoration, the design is fused right into the melamine. It's virtually indestructible—immune to perspiration, scratching, staining or chipping.

Paves way for new applications. Most important, the "Schlitztap" represents a breakthrough for plastics into the field of decorated ceramics. It suggests parts ranging from decorated containers and giftwares, to lamp bases and door knobs—all made of beautiful, break-resistant melamine.

How it's done. Among the technical molding problems overcome by Chicago Molded was appearance of bubbles on the decorated surface, mottling of colors, and "burning out" of the pastel tones. Using a dual cycle operation, each piece is molded in a horizontal position on a 170-ton transfer press. During the first phase, melamine is forced into the die and allowed to pre-cure. The mold is then opened for positioning of two melamine foil overlays. Then there's a final curing cycle and the decoration becomes an integral part of the completed handle.

Whatever your plastic molding needs, you'll find it pays to call in Chicago Molded. CM engineers keep abreast of the progress in plastics, often create that progress to help you make your product more saleable. That's why 66% of our business comes from firms we've served for over 20 years.

For your free subscription to Plastics Progress, CM's magazine on up-to-date

developments in plastics, write today to:

PRODUCTS CORPORATION

1025 North Kolmor Avenue, Chicago 51, Illinois

### LYON QUALITY DESIGN makes THE DIFFERENCE!



STEEL WORK BENCHES, for example. At a glance all work benches may look alike but there's a world of difference—in strength, rigidity, stability and smoothness of working surfaces. That's why you should check Lyon before you buy.

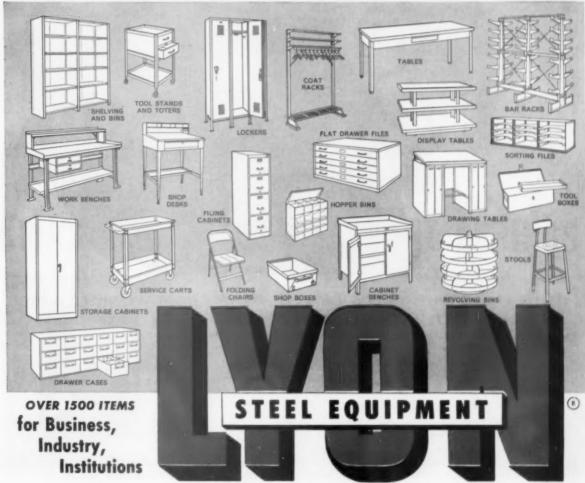
This same quality design makes the difference in every one of the more than 1500 standard Lyon items, a few of which are shown below.

CALL YOUR LYON DEALER. He offers the world's most diversified line of steel equipment. Equally important, he can show you how to get the most for your money in terms of saved time and space.

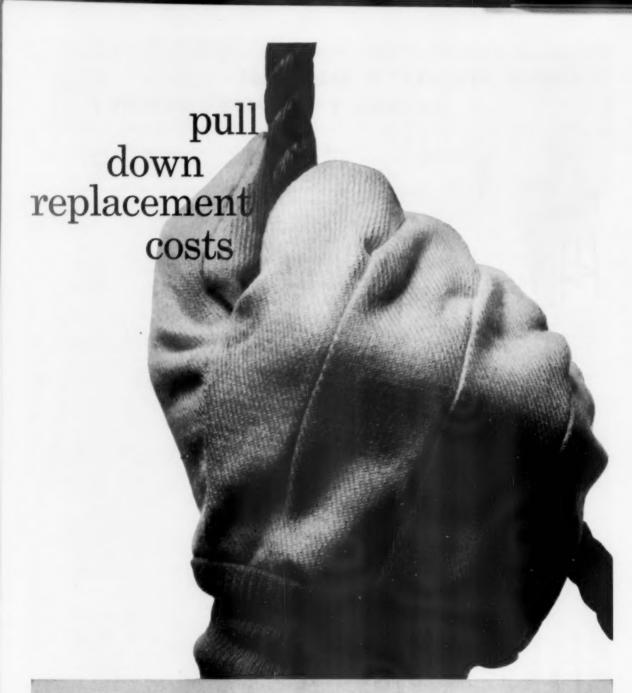
We can manufacture special items to your specifications.

#### LYON METAL PRODUCTS, INC.

General Offices: 1233 Monroe Ave., Aurora, III. Factories in Aurora, III. and York, Pa. Dealers and Branches in All Principal Cities



For More Information Circle No. 208 on Inquiry Card-Page 17



### YOU CAN GET UP TO TWICE THE WEAR FROM WORK GLOVES REINFORCED WITH DU PONT NYLON. Here's proof:

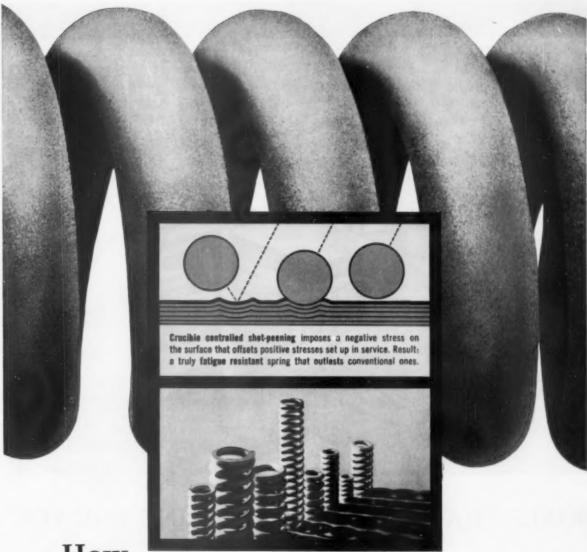
Work gloves reinforced with 50% Du Pont nylon in the wearing surface\* were tested side by side with ordinary cotton Canton flannel gloves on a rugged industrial job. They lasted up to 2.2 times longer—saved about 45% in replacement costs! Be sure your gloves are built for extra wear . . . ask for nylon-reinforced work gloves when you buy. E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Department, Wilmington 98, Del. \*Higher percentages of nylon may give even greater durability, as indicated by laboratory data.





BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

90 minutes everybody will be talking about - the Du Pont Show of the Month, CBS-TV. Next show Friday, Dec. 20.



CRUCIBLE FATIGUE RESISTANT SPRINGS

are made stronger to last longer...

First, every Crucible fatigue resistant industrial spring is shot-peened. It's the best way to insure high fatigue resistance under rugged operating conditions. And it makes the spring stronger by eliminating stress concentration points that could lead to spring failure.

But, most important, Crucible gives you full measure of the two factors upon which good springs depend: good spring design, and fine steel. In addition to Crucible's staff of proven spring designers and spring makers is Crucible's years of experience in fine steel making—from ore to finished spring. When you have a spring application, let an experienced Crucible spring specialist suggest the best spring for it. And write for a free copy of the "Handbook of Coil Spring Design". Spring Division, Crucible Steel Company of America, McCandless Avenue, Pittsburgh 1. Pa.

**CRUCIBLE** spring division

Crucible Steel Company of America

For More Information Circle No. 210 on Inquiry Card-Page 17



#### BOXES THAT NEVER STOP SELLING FOR YOU



Take this fresh look at your boxes: do they excite sales action for your customers? Do they project your trademark, stress product features, clinch sales? Let Gaylord specialists in design and printing go to work. They transform "just boxes" into active sales-builders. They do it for others—can do the same for you.

Call your nearby Gaylord packaging engineer to get things rolling.

CORRUGATED AND SOLID FIBRE BOXES . FOLDING CARTONS . KRAFT PAPER AND SPECIALTIES . KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION \* ST. LOUIS

DIVISION OF CROWN ZELLERBACH CORPORATION

# Auditing the Purchasing Department

NOTHING is more frustrating to the company auditor than to come upon a purchasing department that handles the receiving reports and checks the invoices covering its own purchases, and perhaps counts and prices the inventory as well.

The auditor contends, with a good deal of sound reason, and with no aspersions on the integrity of the purchasing officer, that this sort of thing can easily reach the point where it represents poor management practice, lacking in essential, auditable controls on departmental performance.

Many purchasing agents agree with this contention. The practical answer, of course, is that convenience and efficiency of operation, and economy of record keeping, frequently dictate such an arrangement even in companies of considerable size. Consequently the purchasing agent has no choice but to accept the broad responsibility.

But there is no reason why the principles of good auditing cannot be incorporated into the procedure. That makes for better management both at the company and the departmental level.

Enlist the professional advice of the auditor in setting up your record system so as to provide automatic, objective checks within the current, day-to-day procedure. One simple step is to assign the various phases to different individuals or groups within the department. That is right in line with the auditing principle that it's better to have a continuous control at a few key points than to make more exhaustive checks on selected items once or twice a year.

Equally important is the matter of establishing standards for evaluation. Typically, auditing procedure embraces three stages of evaluation.

The special or exceptional transaction is measured against normal procedures. That's simple,

The normal procedure is examined for its conformance to established policy. Do you have a definite, stated policy to make such measurement possible?

The established policy is examined for its effectiveness in attaining management goals, such as budgets, quotas, or target costs. Have you developed standards of performance and appropriate cost indices to give meaning to such comparisons?

The audited department knows where it is going and how it is doing. It can command the respect of management on the basis of facts and figures rather than argument and opinion.

Stuart F. Henritz



#### NEW DEPARTURE PILLOW BLOCKS-BUILT FOR LOWEST MAINTENANCE

- New Departure adapter ball bearings are sealed and lubricated for life.
- Design is compact and rigid—fits easily in limited space.
- No grease nipples or other protruding lubricating fixtures needed.
- Pillow blocks are easily mounted without need for any special tools.
- New Departure ball bearings are high capacity, precision-built for long life.
- Bearing and block surfaces are spherical to accommodate any misalignment.
- Thirty-two shaft sizes, ½" through 2<sup>15</sup>/<sub>16</sub>", for wide variety of applications.
- Interchangeable with most other makes of pillow blocks.

Mounting pads are furnished with each New Departure Pillow Block to assure easy interchangeability with all pillow blocks having a high base-to-center dimension.

Bearings are easily applied to shafting and are positively locked in position with eccentric cam locking collar and set screw.

Elongated boit holes designed to accommodate practically every type of spacing for hold-down bolts.



New Departure Pillow Blocks employ performance-proved Type AE adapter ball bearing with Sentri-Seals for long-life protection against dirt or grease leakage.

Send for Catalog PBC





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EPARTURE

DIVISION OF GENERAL MOTORS, BRISTOL, CONN.

NOTHING ROLLS LIKE A BAL

For More Information Circle No. 212 on Inquiry Card-Page 17

#### DECEMBER, 1957 PURCHASING





Ring out the old! Ring in the new! We jump the gun on the traditional New Year's plea by a month to hail a very special event. Beginning with the January issue, PURCHASING will be published every other Monday—bringing you 26 issues every year instead of the present 12. We

mention it here because the "Highlights" page you are now reading is on its way out. From January on, it will be incorporated into the Contents Page, which will continue to appear on Page 5. For more details on the Big Change, see page 82 of this issue.

Before we get moving too fast, however, let's not forget that December is still with us. And when you've got December, you've got Christmas and when you've got Christmas, you've got the Gift Problem. Every year, a lot of people seem to think you're beating a dead horse when you start to discuss Christmas giving—and receiving. Yet every year we get a greater and more voluble response to our surveys on what to do about gratuities from vendors. This year we also asked sales people for their views—and the response was really hot. Read all about it in a special report that runs from page 75 to 80.

The Short Cuts for Buyers section this month features helpful information on three important purchasing areas: Handling of Rework Charges (page 83); Evaluation of Vendors (page 85); and Simplification of the Purchase Order (page 86). Be sure to see this section regularly—and if you have any good ideas of this type you want to share with your fellow purchasing agents, let us know about them.

Trying to measure your own performance, or that of

members of your department, is a tough and often frustrating job. But it's not an impossible one. The basic step, of course, is to set some standards to go by, then establish the mechanics for weighing performance against those standards. Some practical suggestions on how to lay the groundwork for a program of Measuring Purchasing Performance are given in the article beginning on page 87.



The world seems to grow more complex and in some ways more mystifying every day. Purchasing has been affected by the trend, too—nowadays, according to one harried executive, "the P.A. has to be part-time lawyer, accountant, engineer labor relations expert, political scientist and, if he

has time, buyer. He has to diagnose all kinds of things that have economic effects." Readership studies have shown us that P.A.'s think one of the best ways to keep a finger on the pulse of business is to study our monthly report on economic and market conditions—called, naturally enough, "The Pulse of Business." This popular report (starting on page 103) gives you a quick, authoritative analysis of the business trend—and how various developments (beyond basic economics)—scientific, social, and political—are affecting it. And don't forget—starting with the January issue, The Pulse of Business" will begin on page 7.

Be sure to check our regular monthly departments: the Washington Report (page 13); Catalogs (page 17); New Products (page 138); News of Suppliers (page 22); Association News (page 198); and Purchasing People (page 242).

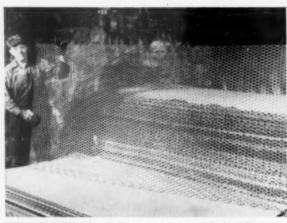
next month:

PURCHASING Begins New Bi-weekly Schedule— Pulse of Business Starts on Page 7

## For maintenance steels...call Ryerson



COLD FINISHED SHAFTING—Ryer:on stocks of turned, ground and polished bars (C-1025, C-1045 and C-1141) provide a ready source for shafting of outstanding size accuracy, straightness and concentricity. For greater strength use Ryerson heat-treated Rycrome, a medium carbon alloy.



EXPANDED METAL—Furnished in two basic types, standard and flattened, Ryex expanded metal is light yet strong and rigid—easy to handle because sharp edges have been removed. Use it for enclosures, machine guards, grilles, shelves, bins, etc. Also available: Ryex expanded metal grating.



GALVANIZED SHEETS—Tight-coated galvanized that forms without flaking is available in a wide range of gauges and sizes. Sheets take paint or lacquer readily without "weathering." And for roofing, siding, etc., they can be furnished with standard corrugation or attractive new mansard corrugation.



STAINLESS PIPE & TUBING and fittings as well, are on hand in a complete range of types—304, 316 and 304-L for welding applications involving severe corrosion, and in a full range of sizes including schedules 5, 10, 40 and 80. Valves and welding and screwed type fittings also available.

#### Every kind...quick shipment

Whether you're up against an emergency or a routine need for steel, call Ryerson. You'll get what you want when you want it.

Steel of every kind and shape and size is available at Ryerson, from the world's largest stocks. It's ready for shipment fast—selected, checked and dispatched by an organization with over 115 years of metal distribution experience. And Ryerson is ready to help with steel selection, application suggestions, and scheduling. Ryerson steel and Ryerson service are as near to you as your telephone.



SAFETY PLATE— Tough, rolled steel plate with the Inland 4-WAY safety pattern is available in two pattern sizes for industrial flooring, stairs, ramps, platforms.



WELDED GRATING for strong, durable open steel flooring is available from Ryerson with all necessary cut-outs and banding. Comes painted or galvanized.



PERFORATED SHEETS for immediate shipment in standard patterns. Other patterns perforated to order from carbon steel and stainless sheets and plates.



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For More Information Circle No. 213 on Inquiry Card-Page 17

Both P. A.'s and salesmen are overwhelmingly opposed to business gift giving. But neither group is doing much about it. So the problem remains unsolved and business gifts continue to be a major industry.



# Who'll Shoot Santa Claus the Salesman or the P. A.?

By Dean S. Ammer

B usiness gift-giving is big business. No one can estimate its exact dollar volume, of course. However, more than one marketing expert places it in the half billion-dollar class, and the Advertising Specialty National Association estimates that business giving has grown from \$200 million in 1950 to between \$750 million and \$1 billion this year. If these estimates are accurate, then business gifts is one of our larger industries.

Does this seem fantastic? Well just look at some of these facts about the industry:

 Harry & David and the Fruit-of-the-Month Club would certainly be small time were it not for business gift-giving. How many people do you know who spend their own money for this product (delicious as it is)?

 According to Printers Ink, 60% of Brown & Bigelow's \$55,000,000 sales volume is in business gift specialties.

• A number of firms such as Certif-A-Gift, Select-A-Gift, etc., specialize in merchandising certificates permitting the donee to pick up his gift from a wide selection within a given range.

• Many sales managers would consider one firm's allocation of .1% of annual sales for Xmas presents to be quite reasonable.

• One liquor company purchasing agent uses his influence to help his company boost its sales of Christmas cheer. He sends out a general letter (over his own signature) extolling the virtues

of the company's products as gifts.

Does all this seem immoral? It does to some people. Life in its October 14 issue considered business gift giving one of the "white collar crimes" along with tax evasion, confidence rackets, etc. And business gifts may be one of the reasons (despite all the progress that has been made by the N. A. P. A. and other professional groups) purchasing doesn't have as much social prestige as many other occupations. In the eyes of the outsider, for example, the engineer has more prestige than the buyer. The buyer is considered to be the target of business gifts—and the general public respects him the less for it. (Engineers, of course, are frequently remembered by suppliers, but the general public is rarely aware of it.)

#### Two Surveys Made

The P.A., of course, is an almost-always-innocent sufferer from popular misconceptions created by Life and other widely read consumer publications. Try to get business from 99.99% of the P.A.'s on any basis but price, quality, delivery and service. You'll then know exactly how effective gifts are as you're kicked out the door.

But misconceptions persist. To help clear some of them up, Purchasing made two surveys. First it asked a representative cross-section of purchasing agents about the business gift problem.

#### We asked P.A.'s-



At this point, the cynic might well sneer, "you can naturally expect a group such as this to give themselves a complete whitewash." But Purchasing anticipated the objections of the cynical. It made a second survey of sales managers to confirm the P.A.'s survey. Some questions were deliberately made the same to both groups to check for inconsistency. Although there were differences in the replies, they could be accounted for as normal statistical deviations.

Some replies were amazingly consistent. For example, you'll note that 75.6% of the P. A.'s and 76.0% of the sales managers would "like to see gift-giving eliminated entirely." Also notice the relative consistency of opinion on how "antigifters" feel the practice should be eliminated. 45.2% of the P. A.'s and 53.8% of the sales managers think the initiative should come from the supplier while 14.7% and 21.4% think customers should simply refuse to accept gifts.

#### We asked sales managers-



well, how elaborate a gift do you feel is 6 How often do customers put the "bite" ? 6 Do you think your sales and earnings would be hurt if you cut out gift-giving

Even though over three-fourths of the salesmen and P.A.'s are completely opposed to business gift giving, don't think this means the practice is about to die out. A large part of the people who are against gifts do think they're effective sales tools for the donor:

· According to Printers Ink (Sept. 27, 1957 issue, page 106), "about half the men who get presents feel that they are obligated . . . "Printers Ink explains that the buyer doesn't forget his obligation to his company but "does acknowledge that presents help keep his door open to salesmen.

 Half the P. A.'s surveyed would consider it worthwhile to spend part of their sales commissions on entertainment and gifts for purchasing agents if they became manufacturers' represent-

· A fourth of the P. A.'s surveyed know of cases where a supplier got preferential treatment because of gratuities and nearly a third of them think the good will generated by gratuities is worth its cost.

• 70% of the sales managers surveyed have had the experience at least once in their careers of a customer asking for a gratuity of some sort.

#### Where There's Smoke

All the above really bears out, of course, is what was said at the beginning of this article; namely, that business gifts are big business. They don't actually even prove that business gifts are profitable investments for the donors. The fact is gifts are a waste of money in many cases. Although half the sales managers surveyed said they bought gifts for their customers, less than 20% of them believed sales and earnings would be hurt if they cut out the practice. In other words, over half the companies that give gifts to customers don't do it on an economic basis. Do they do it in the true Christian spirit of giving without hoping to receive in return? Let's hope not. Management of any company is obligated legally and morally to spend its stockholders' money wisely in the best interests of the company. Business gifts that are completely altruistic

#### We asked both sales managers and P.A.'s-

	Managers
45.5%	53.0%
23.9%	30.0%
23.6%	12.4%
7.0%	4.6%
	23.9% 23.6%

(Both sales managers and P. A.'s also mentioned production and maintenance as possible recipients of gratuities.)

•				
2 Would you like to see business gift-giv-	9	Yes	75.6%	76.0%
ing climinated entirely		No	24.4%	24.0%
		Each supplier should stop giving gifts	45.2%	53.8%
			45.2% 14.7%	53.8% 21.4%

Congress should pass legislation preventing expenses for gratuities from being deductible on tax returns.

would be a criminal mis-use of the stockholders money.

Stockholders needn't get excited. Even though most sales managers are spending money on gifts that is doing nothing to boost profits and sales, they've got some pretty good excuses. The fact is they're sort of trapped into spending money that will do them no good in many cases. A third of the sales managers are afraid of the adverse reaction if they cut out what they believe is a

wasteful custom. Another third apparently just go along with the custom because of inertia.

10.1%

And their fears are logical. Suppose you're doing \$50,000 worth of business with a company and spending perhaps \$500 for Xmas gifts for the president, vice president, purchasing agent, chief engineer, and maybe a half-dozen others. Everything's going along fine. Why upset the applecart? Maybe no one will be offended if you stop spend-

(Please turn to page 328)

# Purchasing, Sales Unite To Beat the Gift Problem

Christmas gift-giving is a two-way proposition affecting both purchasing and sales personnel. Here's how one company set up a coordinated policy to lick the problem on both sides.

By Leonard Sloane

WHEN a purchasing agent tries to attack the problem of Christmas gift-giving, he is often confronted with an embarrassing situation in his own back yard—that is, his own salesmen are giving Christmas presents to buyers with whom they come in contact.

If such a condition exists, the P.A. has two alternatives: (1) establish a purchasing department policy while ignoring other departments' activities in the field of gift-giving and receiving or (2) attempt to create a coordinated company-wide policy regarding Yuletide gifts. The purchaser who can eliminate gift-giving by suppliers is worthy of high praise, but the P.A. who can get the idea adopted as company policy is the man who will win the respect and admiration of top management, along with recognition of an exceptional administrative achievement.

Such a man is Edward M. Krech, director of purchases at the J. M. Huber Corporation, New York, manufacturers of printing inks, carbon black and clay. When he arrived at the Huber organization about ten years ago, he determined to eliminate gift-giving in his department. One of his first moves was the creation of a purchasing department manual which included this sentence: Every employee of the purchasing department is forbidden to accept from any seller, at any time, gifts or gratuities in any form for himself or his family.

"I don't want to be a policeman," says the personable Mr. Krech, "nor do I want to say that anyone who accepts a gift will be fired. But I don't believe employees in our department will accept any gifts from suppliers."

The line from the manual has been reprinted in Huber's welcoming booklet for all visitors, "Let's Get Acquainted." Just about all its old suppliers know of the company's policy and new ones who don't know the rules learn quickly, notes Mr. Krech.

#### A Negative Effect

"We try to show suppliers that when they violate our rule, it actually can have a negative effect on their companies," Mr. Krech affirms. "We show them that they've spent money unnecessarily and that they may have antagonized the buyer they have to do business with."

What is done when gifts do arrive in the offices of Huber buyers? "We either send the gift back or in the instances where we don't want to insult the giver, we send out a letter asking the vendor not to do it again," Mr. Krech says.

"There are some men, however, who might send a modest gift like a bottle of liquor or a couple of ties—and would resent any inference that this was an attempt to influence our buying. This is a problem in public relations as much as anything else, Or what about the fellow who sends you a nominal gift with your monogram on it?

"The one thing we don't want to do is flaunt it in his face and make him feel like a nincompoop. So while we don't return the present, we make a strenuous effort to explain to him that while we appreciate the thought, we'd like him to discontinue future gifts because of company policy."

Mr. Krech was able to see his ideas on gift-giving working rather well within his department and with outside suppliers, but Huber salesmen continued to give gifts to their customers. The forceful purchasing agent, who had eliminated gift-receiving within the Huber organization therefore put his energies to the task of doing away with Huber gift-giving. He re-doubled his efforts in 1955, when a supplier noticed this inconsistency in the company attitude and mentioned it to him.

The results of his work bore fruit in the fall of 1955, when a letter to all suppliers went out under the signature of President H. W. Huber, informing them that official company policy would forbid any company personnel—in the sales, purchasing and all other departments—from receiv-



Sales Vice President Harris:

"Since we stopped the practice of gift-giving, I don't know of any case in which we've lost business from our customers."



Director of Purchases Krech:

"We try to show suppliers that when they violate our rule, it actually can have a negative effect on their companies."

ing gifts in the future. At the same time Huber's sales department stopped giving gifts to suppliers.

#### No Business Lost

A talk with G. W. Harris, vice president in charge of Huber's industrial product sales, indicates the advantages of the coordinated policy on gifts. "We originally had a small, selected list of people to whom we sent gifts, but by December 1954 it had grown all out of proportion and we spent about \$8,000. Since we stopped the practice, I don't know of any case in which we've lost business from our customers."

Mr. Harris, a serious and thoughtful executive, has definite ideas of his own on gift-giving.

"Any Christmas giving is inequitable," he asserts. "There are so many people in each company who may have an effect on your sales, from the president down to the man on the loading dock. So if you give a few presents to executives and purchasing agents, you may be overlooking the one person who actually did the most for your company during the year. And if you give gifts to everyone, then you really have a sizable dollar item."

The Huber sales vice president feels that the expense of Christmas gift-giving doesn't end with the purchase of the present. "There's the expense of handling, mailing, insurance, replacing broken presents and many other items that add to total costs," he says. "A gift that we may buy for five or six dollars at wholesale can easily cost us around ten dollars by the time all the charges are totaled."

Neither Mr. Krech nor Mr. Harris claim 100% effectiveness for the Huber solution. Both men realize that in any organization where many people and many companies are involved there are bound to be exceptions to any rule and shades of interpretation of any policy. However both agree that a big step forward has been taken to lick the problem of Santa Claus in business.

"This isn't an ABC problem and we have to do a continual educational job," says Mr. Krech. "The gift-giving custom has been a habit for a long time—and like all habits this one will take a while to change completely. But with the backing of top management, it can be done and thereby benefit both buyers and sellers."



# Are You Losing Money On Minimum Rates?

Most P.A.'s know they can save on quantity pricing when building their inventories. But how many realize they're penalizing themselves by paying minimum freight rates on small shipments? Here are a few hints on how to keep costs down by increasing weight of shipments.

By Douglas Dawson, General Traffic Manager Company, Worcester, Mass.

All this has resulted in an excess of transportation units today; and neither the railroads nor the motor trucks, generally, are making a profit.

RANSPORTATION in this

country today is suffering from the same basic ill as steel and other essential industries-over-

This has come about for a number of reasons. Fifteen years ago we were in a world war. Because

of the demand of national de-

fense, more and more purchasing agents required overnight service

when possible. Consequently the

motor truck industry, which was

developing slowly, received a tremendous shot in the arm. It

was further assisted by a vast road building program during the past 10 years. It was originally

designed for private passenger

use, but was easily adapted to increasing motor truck participa-

built plant capacity.

The reduction in tonnage to both rails and motor trucks has created a situation, freight-ratewise, where it has become necessary for them to price commodities carefully, particularly to the extent of applying penalties to small-weighted shipments. They have gone into selective pricing on commodities and in respect to weight.

During the last 10 years, freight rates have increased over 100 per cent. During the same interval. minimum charges per shipment have increased as much as 500 per cent, because railroads and



"The profit position of railroads and truck companies has made it necessary for them to price commodities carefully, . . . to the extent of applying penalties to small-weighted shipments."

Adapted from an address to the New Eng-Purchasing Conference, Boston, Mass., Oct. 23.

motor trucks alike are increasingly aware of the high cost of pickup, handling and delivery of

certain weight groups.

As an illustration: 70 per cent of all the small shipment motor truck tonnage from New York to Boston travels at a rate of \$1.67 per 100 pounds, but the minimum charge is \$3.90. This means that you have to ship 234 pounds to get the benefit of the freight rate. Or you might look at it this way—with a 100 pound shipment you could ship another 134 pounds for nothing. This is true on most motor truck shipments as well as on rail shipments at the 100 pound level.

Have you considered asking your suppliers to hold for sufficient weight to clear the minimum charge? In addition, from New York to Boston, when the weight reaches 1,000 pounds, you get a 20 per cent reduction in freight rates. When you reach 6,000 pounds, you get a 38 per cent reduction in freight rates. This changes at 12,000, 20,000 and 28,000 pounds, so that a 28,-000 pound truckload results in a reduction of 68 per cent in the freight rate as against a shipment of say 500 pounds.

Also, on small shipments the motor truck rates are about 15 per cent higher than rail, and in many cases motor truck service is not needed. So very often consideration can be given to a change in routing to take advantage of the saving at no increase in weight.

To many of you, transportation may seem an insignificant part of the sales price. However, lakes and rivers are made up of small drops of water. You might be surprised at the savings that can be made by taking a look at the shipments from your large suppliers to see if you are getting the full benefit of quantity pricing in transportation. I would venture to say that quantity pricing in transportation in many cases offers a greater opportunity for saving than quantity pricing of your purchased products.

On large orders, for instance, if you were receiving a truck-load every two weeks and could readjust your inventory to receive a carload every month, you undoubtedly could realize a saving because of the greater weight

involved.

Once you start looking at transportation costs, common sense will provide the answer. If you do not have a traffic man in your company, the chances are that your suppliers, if they are large enough, do. You might ask them what they can do to reduce trans-

portation costs on their shipments

to you.

You might consider channelized routing to reduce the number of carriers serving your facilities. Investigate United Parcel Service, which is operating very successfully in Massachusetts at Parcel Post rates—guaranteeing overnight service, insuring up to \$100 per package at no extra cost, and obtaining a signed receipt on every shipment.

Many dollars are wasted in transportation because of incorrect freight rate descriptions. This is another area where stud-

ies should be made.

It may interest you to know that the 3 per cent transportation tax is not charged on prepaid shipments from Canada or from Mexico into the United States. If you are receiving collect shipments from either of these countries, you could arrange with suppliers to have material forwarded on a prepaid basis, with freight charges billed on your invoice.

The average business man is so busy doing the urgent that he seldom finds time for the relatively important. But I know that a little time, effort and thought devoted to the question of quantity pricing in transportation will produce pleasantly surprising results.

#### **PURCHASING to Publish Every Other Week**

B EGINNING with the January 6 issue, Purchasing Magazine will be published every other week, instead of monthly.

This is what the new publication schedule will give Purchasing readers:

Broader coverage of the purchasing profession
 —new ideas, association activity, personnel changes,
 etc. (The editorial staff of the magazine has been
 almost doubled to maintain the high standard of
 authoritative coverage Purchasing has supplied since
 1915.)

 More articles on latest developments in purchasing methods, procedures and policies.

 Regular monthly analyses and forecasts of economic and market trends by practicing economists in the Pulse of Business section. This section will start on page 7 in every other issue. One of its features will be the "Purchasing Pulse" index of business confidence, based on a regular survey of 1000 purchasing executives.

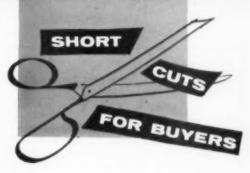
 Interim reports—in every other issue—on what's happening to the economy, under the title "Purchasing Previews." This section will start on page 7 in every other issue.

 Special Purchasing Research reports on specific commodities and industries to help you in your longrange planning.

 New location for the Purchasing Opinion Poll page 19.

.... plus many other features designed to help you do a better buying job. Watch for the new bi-weekly Purchasing next month!





# How to Handle Rework Charges

By Ned Kellogg

Most important—you have to have a definite policy. De Laval's purchasing department has worked out a simple, clearcut procedure for charging vendors for the rework it performs on defective material.

A LMOST EVERY purchasing agent has had experience with the problem of charging vendors for rework on defective material. But surprisingly, a Purchasing magazine survey has shown that nearly 50 percent of PA's lack a definite policy on handling chargebacks for rework done in their own shop.

This means that just about one out of two purchasing agents is asking for trouble. It can come in many ways:

(1) Without a fixed policy on chargebacks, the buyer may rework an item without getting an ok from the vendor. When the vendor gets his bill, he's likely to complain that the charge is too high, or that he could have cor-

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In addition to its internal use, a copy of De Laval's "Supplier Defective Material" report is sent to the supplier whenever there is a problem.

#### What P. A.'s Say About Rework Charges

Several years ago Purchasing Magazine surveyed a large number of purchasing agents to find out how they handle the problem of rework charges. The results showed some interesting trends and pointed to several differences in opinion. These are the highlights of the study!

46 per cent of the P.A.'s said they have no definite

policy on rework chargebacks.

Of those who do have a policy, 21 per cent outline

the policy on their purchase orders.

Nearly half of the P.A.'s (44 per cent) base their rework charges on direct labor cost plus full shop overhead. Thirty-two per cent based their charges on hourly labor rates only.

87 per cent estimate rework charges and get the vendor's approval before going ahead with the repair work.

53 per cent of the P.A.'s are willing to absorb rework costs up to a certain amount even though the vendor is responsible.

In returning rejected material to a vendor, 75 per cent of the P.A.'s charge back transportation costs both ways; 21 per cent charge for one-way transportation; 4 per cent don't make any transportation charges.

rected the defect for much less.

(2) If the vendor is not contacted before rework is started, he may argue that he was not re-

sponsible for the defect.

(3) Without a definite procedure to follow, it's possible for a company to return defective material to a vendor (freight collect), only to have the vendor claim the material should have been scrapped.

(4) There is certain to be an increase in paperwork, time loss and cost when there is no definite policy. Much of this will be the result of trying to straighten buyer-vendor disagreements.

(5) There is usually much more friction between buyer and vendor when the purchasing agent does not have a firm chargeback policy.

#### Streamlined Method

At De Laval Steam Turbine Co., Trenton, N. J., few of these chargeback problems ever arise, however. Purchasing Agent Ed Schwarz has worked out a simple, effective procedure which has reduced the handling of chargebacks to an almost automatic operation.

Basic ground rule in De Laval's

system is to charge a vendor if rework totals more than 5 hours a month. Chargebacks are made at the rate of \$5 per hour. This, of course, does not cover the cost of materials. However, as PA Schwarz explains it, the chargeback does offset some of the cost and puts pressure on vendors to supply material that will be up to standard.

Key to the way De Laval handles rework charges is its "Supplier Defective Material" report (see cut). Whenever a defect shows up, the department inspector puts down all the various facts on the supplier defective material report. He first writes a brief description of the defect, and, if necessary, draws a sketch of the defect. The inspector also indicates how the defect should be handled: "rework", "scrap", or, if the material is not up to standard but is still usable, the report is marked "pass". If the amount of rework required can't be determined immediately, the report is marked "reopen."

If rework is necessary, the inspector describes what has to be done and gets an estimate on how long the job will take from the department foreman. This information is also noted on the supplier defective material report.

The report is then sent to the purchasing department. After receiving the report, purchasing calls the vendor. The problem is explained and the vendor is told how much he will be charged for the rework. He is given the option of visiting the plant to inspect the defect before any rework begins.

#### **Used in Vendor Rating**

A copy of the supplier defective material report is then sent to the accounting department where the charge is posted against the vendor's account. In addition, the amount of the charge is punched on an IBM card and becomes part of the vendor rating report which is sent to the purchasing department each month. (From additional information supplied by the purchasing department, the vendor rating report also shows the amount of business placed with each supplier during a month and how often a supplier failed to meet a delivery date).

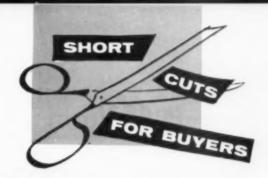
Once a month, a copy of the supplier defective material report is sent to the vendor. Even if no rework was necessary, and the report had been marked "pass", the vendor still receives a copy as a warning that his work is not up to standard.

#### **Vendors Know What to Expect**

A form letter is also sent to the vendor along with the supplier defective material report explaining the rework charges. In the letter the vendor is asked to state "what steps are being taken to overcome these discrepancies in the future."

The main advantage of De Laval's supplier defective material report is that it forces everyone concerned to follow a definite procedure in handling chargebacks. There's no question on how the problem should be dealt with, and in addition, vendors dealing with De Laval know exactly what to expect if they send defective material. It's by having a definite policy on chargebacks that PA Schwarz has missed out on a lot of headaches.

Mr. Schwarz is now manager of Metal Services Div., Allstates Design & Development Co., Inc., Trenton, N. I.



## **Evaluate**

## Your Vendors

of our plant purchasing agents about performance of vendors," says Jack Hartung, director of purchases for St. Regis Paper Company. "When you're dealing with vendors' top sales people, as we are in New York, it is important to know just what their representatives are doing in the field." This is especially true when you have 61 plants scattered around the country.

Mr. Hartung gets the information he wants by the simple technique of a card system, called, "Quality Evaluation of Suppliers."

Each of the branch purchasing agents is furnished with a supply of cards as illustrated. When a supplier is deficient in the areas stressed by St. Regis, the local purchasing agent simply fills out a card and puts it in a 4" by 6" file box reserved for that purpose.

In the case of national accounts, a complete evaluation report is made annually in August and forwarded to purchasing headquarters in New York. On strictly local suppliers the P.A. makes out a single card for his own records.

#### A Look At Both Sides

To prevent the system from having only a negative approach, a grading method is provided for both a negative and positive evaluation of national accounts. Taking the first item on the card, "Quotations Returned Late" as an example, if the vendor is always late, local P.A.'s will insert the number one; if he is frequently late, the number two; if

QUOTATIONS Quotations returned late Incomplete information Incomplete information Prices repeatedly high Repeatedly quotes false delivery PURCHASE ORDER Late or failure to acknowledge Changes spees and/or delivery after rec. of PO Difficult to negotiate exc. clauses of terms/pay Failure to answer cortexpondence Difficult to negotiate exc. clauses of terms/pay Late delivery Late delivery Failure to manufacture or clause so terms/pay Failure to manufacture or clause so terms/pay Failure to manufacture or clause so terms/pay Failure to instructions Failure to include packing lists or show P.O. No on package st PAYMENT Failure to show P.O. No on invoices and/or in military to show discount terms on invoices Failure to show discount terms on invoices Failure to show discount terms on invoices Failure to show discount terms on invoices Consecuted of the failure to install equipment etc. on schedule Failure to information Failure to information Failure to show P.O. No on invoices and/or in military with own companies product Too infrequent calls Too infrequent and on the own companies product Too infrequent calls Too infrequent call	YE ROUR	ST. REGIS LOCATION	DATE
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Failure to send ship'g notices or b/lading   CLAIMS (This information will be taken from claim report)  PAYMENT   Failure to show P.O. No on invoices and/or in sufficient copies   Failure to show discount tems on invoices   Other   Claim report)	Failure to soute per instructions	Other (use other side of card)	
Failure to include packing lists or show P.O. No. on packages Damages  PAYMENT  Failure to show P.O. No on invoices and/or is sufficient copies Discount tems on invoices Other	Incorrect or false shipping instructions		
Failure to include packing lists or show P.O. No. on packages Damages  PAYMENT  Failure to show P.O. No on invoices and/or is mifficient copies  Failure to show discount teems on invoices.	Failure to send ship's notices or b/ladias	CLAIMS (This information will be taken	from claim report)
P.O. No. on packages Damages PAYMENT Pailure to show P.O. No on invoices and/or in mifficient copies Failure to show discount tens so invoices. Other	Failure to include packing lists or show	Quality	
Failure to show P.O. No on invoices and/or in sufficient copies Other  Failure to show discount tems on invoices Other	P.O. No. on packages	Damages	
in sufficient copies Other	PAYMENT	Shortages	
Failute to show discount terms on invoices		Rejections	
		Other	
Repeated late invoicing One copy to N.Y. Purchasing Department.			· ·
Invoicing pricing does not match P. O. One copy local file.			H.

infrequently late, the number three; and if he is never late, the box will be marked with the number four.

Maintained in alphabetical order by vendor, the cards quickly show up those who need extra prodding or those who are doing an outstanding job. In addition, the evaluation shows in exactly what areas the supplier is failing. A weak supplier can be called in and shown where he is slipping. Faced with a possible loss of business, he will appreciate the opportunity to correct his mistakes.

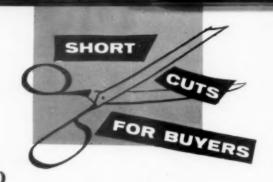
The same procedure is followed in New York for national accounts. A single plant may have very few if any cards on any one supplier. But when cards are coming into New York on a nationwide basis the poor supplier stands out from those who are doing the job St. Regis expects.

Mr. Hartung is now in a position to answer, with complete candor, any vendor's questions regarding their performance in the territories.

The local P.A.'s have found the card system to be a big help to them. It takes only a moment to write in the vendor's name (no need for address), their own location, the date and a checkmark to indicate the infraction. No longer do they have to rely on their memories to get a true analysis, and, additionally, it is impossible to overlook inefficiencies on the part of vendors.

## New P. O. Form

# Simplifies Everyone's Job



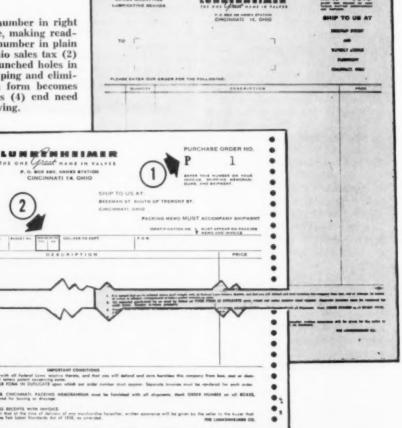
THE WAY to get started on work simplification is to question the value of every one of your operations—the "is this step really necessary?" approach. But occasionally you'll get more interesting results by asking the same question about the operations of someone who has to follow-up on your work.

Director of Purchasing Ralph F. Brengelman of the Lunkenheimer Company, Cincinnati, did just that when he visited the receiving department recently. When he saw receiving clerks hand-in-

serting carbon paper to complete the five copies of each purchase order that go to them, he knew almost without asking that there must be a better way to do it.

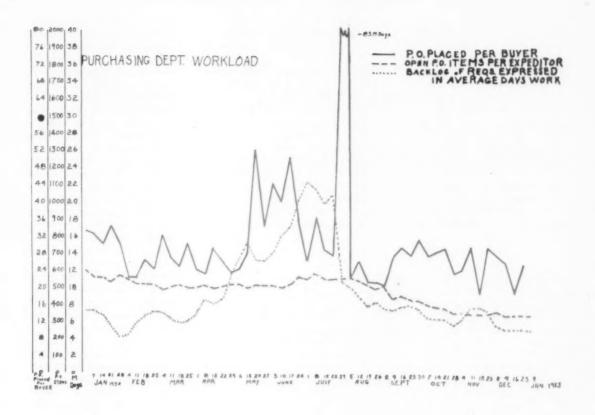
That was the start of a big paperwork change that has paid off in faster, more efficient handling of purchase orders, and a big saving in time and aggravation for the receiving department. Working with the office manager, and specialists of form suppliers, Mr. Brengelman devised a smaller form that carries more essential information, is easier to handle, and simplifies the work of receiving and filing clerks. The chief advantages of the new form are detailed in the illustrations on this page.

Old 8½ x 11 form (top) had order number in right hand corner, but was filed on its side, making reading difficult. New 10 x 8½ form has number in plain view (1) and specific reference to Ohio sales tax (2) which did not appear on old form. Punched holes in margin (3) make for faster, neater typing and eliminate need for extra punching when form becomes historical record. Interleaved carbons (4) end need for hand-inserting carbons by receiving.



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# 16 Ways to Evaluate Purchasing Performance

By Art Pearson, Staff assistant to the Director of Materiel, Northrop Division, Northrop Aircraft, Inc.

THERE ARE two aspects to the evaluation of purchasing performance—evaluation by management, and self-evaluation. Purchasing people are, of course, more interested in the second aspect.

An excellent basis for any program of self-evaluation is the set of "principles of efficiency" set down by Harrington Emerson. One important principle applicable to purchasing people in all sorts and sizes of companies is that of reliable, immediate and adequate records. Modern management practices call for the use of statistics and other control devices to indicate the efficiency of the procurement operation.

These are some of the controls that will help you evaluate your own performance and that of the members of your department:

- A record of the number of purchase orders written each month, These should be listed by buying or commodity group for analysis.
- A record of the dollar amount of orders placed. This can be by buying group as well as by class of equipment. In like manner, a commitment report can be maintained to indicate procurement progress on a sales program.
- 3. A record of the cost of proc-

essing purchase orders and a record of the average commitment per order or workload done by each purchase order. This is a very useful record and should be used with care and ingenuity. This is a very delicate tool. I like it because it is useful. However, it is subject to misuse and misunderstanding. The success of programs to consolidate requirements and small costly orders will be reflected in an increase in the average dollar per order committed as well as increasing the cost of processing a purchase order. Changes in these figures are important not the figures themselves. When the average dollar committed per purchase order is known, it is then possible to predict, roughly, the total orders necessary to procure the materials for a given program. With known procurement times, the time allotment for the placement of this volume of orders can be determined. In other words, your work load. This leads to the question of manpower, both for proper negotiating and for expediting this estimated volume of orders.

 Record of cash discounts taken compared to cash discounts available.

5. Record of incidence of purchase order placement. This record would show the total dollars and orders placed under \$10, \$25, \$100, \$1,000, \$10,000, \$50,000 and \$100,000. A large percentage of orders in the low dollar bracket would indicate need for research into ways to

reduce orders in these categories. Programs of standardization, blanket orders, consolidation of requirements, and changes in inventory control should be considered. Review of the relatively few orders in the high dollar brackets will assure detail control over a large percentage of the dollars committed. It is not unusual for 17 per cent of the orders to account for 50 per cent of the dollars spent.

6. A record of procurement time on requisition received would show those received with insufficient lead time to do a good procurement job. There will always be some rush requisitions. The quantity should be kept at a minimum through constant vigilance.

 The department budget would reflect the relation of costs to procurement. These costs would include salaries, costs of supplies, stenographic help, travel, telephone and similar costs.

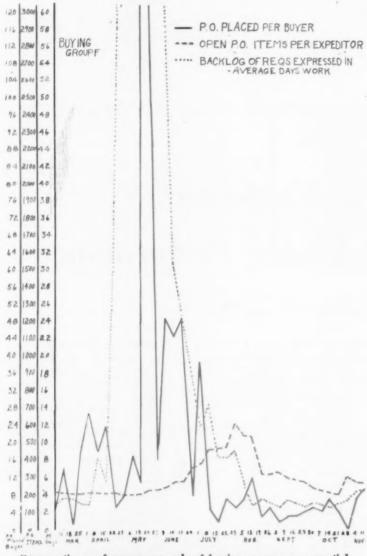
8. A record to indicate expediting time, negotiating time, source inspection or other comparative data. A work load report is the result of establishing work standards for each document handled. Total documents times standard hours would give work accomplished. This could be related to total hours available. Backlogs of paper could be expressed in hours of work.

 Records of approved vendors and what they are approved for. Does the record show vendor rejection rate and delivery performance?

Purchase record on all items bought.

11. Record of gains or losses from speculative buying.

12. Effective procurement might be measured by a record of price indices on the main items of procurement and the relation of these items to market indices. Another method is to establish target prices on the main items (Please turn to page 332)



Comparative performance records of buying groups are essential.

# Rights of Materialmen Under Performance Bond

By Albert Woodroff Gray

UNIMPROVED LAND in Los Angeles, California, was leased with a provision for the construction of an auditorium for not less than \$175,000 and that the lessee give the owner a bond for \$100,000 that the building when completed be free and clear of liens.

Completion of the building was followed by mechanics' liens filed against the property for material and labor aggregating \$86,488.38 and an action for their foreclosure. When the lessee defaulted in the payment of rent the owner had retaken possession. It was decreed in this lien foreclosure action that these lienors were entitled to liens upon the building "down to the surface of the ground."

This action was followed by another brought against the surety on this bond by the materialmen to which was interposed the defense that there was no liability on the surety under this bond since none of these liens had been paid and that only after payment had been made could the owner seek reimbursement from the bonding company.

In its determination of this defense the court followed the decision in an action in that state on a performance bond in which it had been guaranteed that the contractor would pay in full the claims for labor and material in the performance of a construction contract. When the claims in this instance were not paid liens had been filed, suit brought against the surety and this same defense set up by the surety.

"Contracts of this nature," said the court in that decision, "are now generally held to be contracts of indemnity against liability rather than indemnity against loss sustained and paid. The surety under its contract guaranteed that the building contractor would pay all claims for labor and materials furnished. The contractor's default in this regard created a breach of the obligation of the surety against the owner."

To this statement of the law in that earlier decision the court in this later case added, "The bond is a contract of indemnity against liability and not a contract of indemnity against loss sustained and paid. Hence it is not necessary to show loss before recovery can be had on the bond."

#### Contractor's Bond

In another action before an appellate court in that state only a few months ago this same rule was asserted. "The contractor's bond is a contract of indemnity against liability rather than one of indemnity against loss sustained and paid, and the failure of the contractor to keep the property free from liens justifies

the owner in suing on the bond even though he has not satisfied the claims of the lien claimants."

This feature of the law, the surety's liability on a performance bond varies widely in the different states, suggesting in some instances the Mad Dog Elegy of the poet,

"And in that town a dog was found "As many dogs there be, "Both mongrel, puppy, whelp and hound "And curs of low degree."

In a subcontract for the installation of plumbing fixtures in a hospital building at Ft. Worth, Texas, it was provided that the subcontractor furnish to the general contractor "a bond guaranteeing the faithful performance of all provisions of this contract."

This bond provided, "If the said principal shall well, truly and faithfully keep and perform all of the terms, provisions, covenants and conditions of the foregoing contract and shall repay said (general contractor) all costs and expenses he may incur in the prosecution of any suit or suits which may be maintained against said principal on account of any breaches of said contract or this

"The Bond is a contract of indemnity against liability and not against loss sustained and paid. Hence it is not necessary to show loss before recovery can be had on the bond."

"... the appellate court said, 'The trial court ruled that this materialman had no right to sue as a third party beneficiary under the payment bond for the reason that it was given for the sole benefit of the general contractor. We construe the bond differently."

bond, then this obligation shall be void."

Later suit was brought against the surety on this bond for materials furnished the subcontractor and the Texas court refused to impose that liability on the surety. "The general rule," said that court, "that such a bond is a bond for indemnity for the protection of the payee and is not for the benefit of laborers and materialmen is well established in this state."

Further, according to that court, "The bond is to be read and construed in connection with the contract and the obligations imposed upon the subcontractor by the contract are read into the defeasance clause of the bond, because the condition is that if the principal shall perform all the terms and conditions of the contract the obligation shall be void.

"But the obligations of the surety arise out of and are imposed by the bond and are measured and determined by its terms. The bond contains no expression of an intention that it shall inure to the benefit of third parties, no promise on the part of the obligors to make payment for labor and material and no recital or statement that it is executed to guarantee the performance of the covenants of the contract.

It speaks of the terms and covenants of the contract only in expressing the condition upon which the obligor's liability to the obligee is defined and for a breach of which they would be liable to the obligee itself. The bond is one of idemnity to the (general contractor), intended and given as additional security to it for the performance of the contract."

Contrast this decision, that the surety's obligation on the performance bond was to the general contractor alone and that the materialmen were beyond the pale of its responsibility, with a recent decision in New York State in a case arising from similar circumstances, and the inconsistency of the decisions of the courts become more apparent.

Stipulations in a subcontract for the installation of the plumbing and heating system in an apartment building in that state for \$390,000 required a 20 per cent payment bond and a 20 per cent performance bond. When the subcontractor failed to complete the contract the liens filed by

#### REFERENCES

Ceremony v. Drummond, 174 Pac. 2d 696, California

Carpenter v. National Surety Co., 70 Pac. 2d 523, California

Pierce v. Wright, 256 Pac. 2d 1049, California

Employers' Liability Assurance Co. v. Trane, 163 S.W.2d 398 Texas

Daniel Morris Co. v. Glens Falls Idemnity Co., 128 N.Y.S.2d 760, New York

Nash Engineering Co. v. Marcy Realty Corp., 54 N.E.2d 263, Indiana

Haynes Hardware Co. v. Western Casualty Co., 133 Pac. 2d 574, Kansas

Pennsylvania Supply Co. v. National Casualty Co., 31 Atl. 2d 455, Pennsylvania

Arthur L. Corbin: Selected Readings on the Law of Contracts, page 668.

materialmen against the project exceeded \$105,000. Suit was brought on these bonds by a dealer in plumbing supplies against the surety.

The payment bond provided, "If the principal shall promptly make payment to all persons supplying labor and material in the prosecution of the work provided for in said contract \*\*then this obligation to be void, otherwise to remain in full force and effect." The performance bond contained the provision, "If the principal shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of said contract," with provision for the payment of materialmen among its covenants.

#### Intent Must be Ascertained

In upholding the right of this materialman to look to the surety for payment the appellate court of that state said, "The trial court ruled that this materialman had no right to sue as a third party beneficiary under the payment bond for the reason that it was given for the sole benefit of the general contractor. We construe the bond differently. Whether a materialman or laborer may sue upon a bond of the present nature is said to depend on whether it was the intent of the parties to the undertaking to benefit such other persons. That intent is ordinarily to be ascertained from the terms of the bond plus the provisions of the building contract, construed in the light of the surrounding circumstances.

"In the present case there appears to be no objective to be fulfilled by the payment bond except to secure reimbursement of materialmen and laborers. The condition expressed is not that the general contractor will be indemnified against any loss by reason of non-payment of materialmen or laborers."

In an action brought in Indiana by a subcontractor against the surety for plumbing and heating material, the performance bond provided,

"Now therefore the condition of this obligation is such that if the

(Please turn to page 302)



Salesmen entering the outer lobby of the Home Laundry Department are encouraged to visit the Value Analysis Room.

# Room For Savings

By Harold C. Barnett

Many companies spend thousands of dollars to dress up waiting rooms where salesmen (who must inevitably wait) can sit and look at other salesmen, magazines or beautiful pictures on the walls. Here a company shows how to make a reception room more than just a place to receive visitors. WE provide no magazines or other reading material in our waiting room" says D. H. Rohrer, materials manager at the General Electric Home Laundry Department in Louisville. Instead, vendor salesmen are asked to focus their attention on a "Value Analysis Room" and start coming up with ideas before they even see buyers.

There is nothing subtle about the invitation. As a salesman enters the outer lobby of the Home Laundry plant he is greeted by a

prominent sign:

"VENDOR SALESMEN—
through this door is the Value
Analysis Room. In here we invite
your close inspection of our G. E.
Home Laundry Equipment. A
visit will help you better determine the value to us of your product or service."

This is just another aspect of an aggressive procedure to get vendors to participate actively in G. E.'s cost reduction program—a program that is paying off hand-

somely.

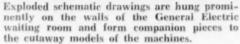
Suppliers get two major benefits from their participation. The most obvious, of course, is more business; which means more money for them. The second is public recognition by G. E. that they are outstanding performers—an extremely valuable aid when soliciting other potential custom-

Vendor aid is tied in with the cost reduction bogeys set for the eight buyers in the purchasing department. Saving to be applied against the bogeys are calculated on an "out of pocket" basis. For instance a cost reduction made in September will not represent as large a saving as a comparable one made in April because the savings will be on fewer manufactured units.

In assigning bogeys, it is done with the full knowledge and cooperation of the individual buyers. Also given consideration are the products or materials purchased. Some items lend themselves to cost reduction while others do not.

Much of the enthusiasm of the purchasing department is passed







Each month a different component or subassembly is selected and hung on a special pegboard to call attention to areas which buyers feel might be worthwhile investigating.

on to the vendor's salesmen calling on General Electric, Every advantage is given to the salesmen to make it easier for them to come up with or give suggestions. No supplier has ever had to force G. E. purchasing agents to listen to a new idea.

Stimulation of vendor cost reduction ideas revolves around the very effective use made of the waiting room located just outside the purchasing department entrance. The room is impercepti-

bly divided into five phases: 1) cut-away models of a washer, dryer; 2) exploded schematic drawings; 3) project of the month; 4) nonproduction items; and 5) Outstanding Supplier of the Month.

#### **Cutaway Models**

The product samples of the Home Laundry Department form the backbone of the entire Value Analysis Room. Hundred of salesmen have walked around these models studying the positioning of products in the entire unit, getting a better understanding of the ultimate use of their own particular product. Companion pieces to the cutaways are the exploded schematic drawings hanging prominently on the walls of the room. Together they give a complete picture of the units manufactured at the Louisville plant.

It should be obvious to the most uninformed salesman why his product must have a certain bend twist or aperture of some kind when he sees it in relation to the other connecting parts. With this knowledge it may now be possible for him to generate ideas for lowering its cost without sacrificing quality or just improve the product itself.

#### Project of the Month

Each month a different component or sub-assembly is selected and hung on a special pegboard to call attention to areas which the buyers feel might be especially worthwile investigating. With the disassembled parts placed in such a handy spot, they can easily be picked up, turned over and scrutinized carefully.

This part of the cost reduction program has also paid off quite well. One vendor picked up a certain part and said, "Why I can make this for you out of hard

Small magnetized caricatures are placed in the proper boat each month to indicate whether the various buyers are over or under their bogeys.



rubber at half the price you're probably paying for it." A few days later he submitted samples. They were acceptable and the buyer switched to the new material for this particular item; getting a less expensive product with higher quality.

#### Nonproduction Items

Another pegboard placed in back of the cutaway models displays some of the high usage non-production items. These include such things as: pliers, certain types of work gloves, rubber stoppers, insulator inserts for welder and the like. To each product is attached a small tag which tells who buys it and the approximate annual usage.

If an alert salesman feels that he can supply the same product or one which will do the job equally well he knows right away which of the eight buyers he should see. With the annual usage immediately available to him he also knows whether his company is capable of supplying it in the required quantities. This is a big headstart for the salesman who might otherwise be reading the Sat.Eve.Post or staring at a blank wall.

Also behind the machines is another board holding parts which the individual buyers put up from time to time. The intention here

is to show items which are not sub-assembled but easily lend themselves to value analysis.

#### **Outstanding Supplier Award**

Part of the buyers monthly staff meeting is devoted to selecting the Outstanding Supplier of the Month. As recommendations are made the buyer handling the product will outline the contributions of the nominated supplier and give any other specific reasons which he feels warrants their attention. The award is definitely not based on the dollar amount saved. Special consideration is given to vendors who come up with original suggestions. In this way, through its award program, G. E. stresses the part it believes to be most important—the vendor thinking for himself and arriving at usable ideas; self-stimulation resulting in products made of less expensive material doing the same job or a better job; products doing a better job without increasing the price.

After selection of the Outstanding Supplier the first step is for Purchasing Agent Munson to write a letter to the vendor congratulating him on winning the award and asking when they can come to Louisville to accept it. At the time the vendor comes in to accept the award, pictures are taken of the presentation and a

small informal luncheon is given in honor of the winners. A write-up describing the product and its use is placed on a special table in the Value Analysis Room. The actual product is also shown in its "before and after" state. E. L. Munson says "that all the suppliers are 'gunning' for this award" and it is a big incentive in getting more suppliers to participate.

Materials Manager Rohrer stresses the point that the main objective of the whole cost analysis program is not to give awards; not to get publicity for the vendors or General Electric; but, rather the objective is to stimulate every vendor to think creatively for the benefit of General Electric and themselves.

#### Results of Program

As far as General Electric is concerned the room is an unqualified success. And this in spite of the fact that the program has not been in progress for a full year.

Never one to leave something to chance, the Home Laundry Department has an accurate appraisal of its Value Analysis program in terms of a "favorable or unfavorable variance." At the beginning of the year a scientific determination is made of the expected and unexpected price rises that will cause a possible increase in the cost of goods purchased. The department will have a favorable or unfavorable variance depending on whether they have been able to match the expected rise through their cost reduction program without a lessening of quality in the goods purchased.

The Home Laundry Equipment Department has a favorable variance of over \$900,000. Since this is a "net figure" it means that their program not only saved the amount which they are "to the good," but they also saved the amount of their anticipated price rise in cost of goods purchased.

Exactly how much the Value Analysis Room and all its facets helped them reach this enviable position it is difficult to say but there is no question in the minds of Rohrer and Munson that it was substantial.



# What Management Expects of the Purchasing Agent

By Stuart F. Heinritz

Abstract of a presentation at the Purchasing Workshop sponsored by the Illinois Institute of Technology and the Purchasing Agents Association of Chicago, October 23, 1957.

WHEN MANAGEMENT sets up a purchasing department, it rightfully expects five things of the purchasing agent.

1. Management expects to have the necessary materials and supplies on hand when needed. This is basic, for procurement is the primary responsibility of the purchasing department and is indeed the very reason for its existence.

It is not always easy. There are times when almost all materials are hard to get, and at almost all times some materials are hard to get. And in practically every purchasing program there are a few odd, rare, or special items that present particular difficulties.

Yet it is a reasonable expectation. Business operates on the principle that "We need what we need when we need it." The purchasing agent, therefore, must approach his assignment with the conviction that nothing is impossible of procurement. On the run-of-mill items, his job is to establish adequate supply lines and to schedule his commitments so as to maintain a steady and reliable flow of material. On requirements where this simple formula is not enough, he must live up to that motto that was so widely quoted during wartime shortages and procurement difficulties: "The hard things we get right away; the impossible takes a little longer."

2. Management expects competent, skillful, professional purchasing performance. This is reasonable, too. It is the same expectation of specialized know-how that management has when it hires a chemical engineer, or a die maker, or an accountant, or an advertising manager. In this case, management is looking for purchasing skill.

Management is not directly concerned with the mathematics of economical ordering quantities or the techniques of value analysis, but it expects the purchasing agent to have these tools and to know how to use them.

Specifically, management expects the purchasing agent to use them as advantageously and economically as his competitor, or perhaps a little better. The second part of this isn't always possible, for obviously everybody can't beat everybody else all the time. Yet it is a good goal to keep

before the buyer. Business is competitive, and doesn't come into the market place with the idea of being second best. The purchasing agent who ducks this standard of competitive performance and is content to regard his job as a service function is letting management down.

3. Management expects the purchasing agent to run his department efficiently, that the cost of procurement may not be out of proportion to the value of the service or the value of the materials purchased. This, again, is something that management expects of every department head.

Management knows that it costs money to operate a purchasing department—to explore markets, to clear requisitions promptly, to follow up deliveries, and to maintain essential records. Management often doesn't know what it is costing the company to spend a purchasing dollar. It might be embarrassing, but healthy, to bring this cost figure out into the open.

Nobody knows exactly what it should cost, but the purchasing agent can be pretty sure if it is costing too much in terms of too much paperwork, too much time spent in straightening out requisitions and expediting laggard suppliers, too much supervision and checking of routine detail. Management rightfully expects the purchasing agent to be constantly seeking the better, more efficient way.

4. Management expects the purchasing agent to be "a company man". That's reasonable, too, for the purchasing department is a part of the company, and the company is underwriting the salary checks and the cost of materials. It is so reasonable that purchasing agents themselves have given it the No. 1 position in their code of principles: "To consider, first, the interests of his company in all transactions, and to carry out and believe in its established policies."

The company man takes pride in the product, in the company's commercial success, and in its business reputation, and bears these in mind as a basic criterion in every purchasing decision.

The company man establishes sound purchasing policies within the framework of company policy. He works with other departments toward the common goal, and doesn't waste his energies on personal prerogative for its own sake or in building a little purchasing empire of his own.

The company man takes pride in his profession (and management respects him for this) but he doesn't let his professional consciousness get in the way of his business responsibility.

5. Management expects the purchasing agent to represent the company favorably in his contacts and relationships in the business and local community. It expects him to act with dignity and courtesy, to maintain a reputation for honesty and fair dealing, and to keep himself and the company free from special obligations to suppliers.

This is a particularly important responsibility in purchasing because of the broad and intimate contacts with other companies that are inherent in the purchasing job. No day goes by, no salesman is interviewed, no letter of inquiry or complaint is written, without the opportunity to create a good or a poor impression of the company. Management is coming to recognize the purchasing department as one of the most vital instrumentalities in the important field of public relations.

It is scarcely necessary to point out that these standards of conduct are just as important to the purchasing agent himself, in establishing the sort of supplier relationships that make for good, trouble-free procurement.

# What the Purchasing Agent Expects From Management

THE SUBJECT of purchasing-management relations is not complete without a look at the other side of the picture. To do this job effectively, and to make a maximum contribution to the success of the company, the purchasing agent rightfully expects five things of management.

1. The purchasing agent expects management to provide adequate facilities to do the job.

This includes an adequate staff, adequate in both quality and numbers, consistent with the job that the purchasing department is expected to do.

It includes decent office space, consistent with the impression the purchasing agent is expected to give, and working conditions and equipment consistent with high departmental efficiency and morale.

It includes an adequate budget to implement the job—to maintain basic research services, to encourage association membership and reasonable travel to visit supply sources,—and an expense account that will enable the buyer to stay free from obligations to salesman.

2. The purchasing agent expects management to back up the purchasing department in dealings with the vendor.

He expects the company to live up to its legitimate commitments, and to be in fact a good customer, a good company to do business with.

He expects management policies to channel all sales approaches to or through the purchasing department, and not to override purchasing decisions at the top executive level.

He expects management to keep from hobbling purchasing's initiative and freedom of negotiation through reciprocal buying arrangements and other restrictive mandates affecting sources of supply.

3. The purchasing agent expects management to back up the department within the company.

He expects management to define his position in the company, the scope as well as the limitations of his authority. He expects management to give written sanction to purchasing policies and regulations, once they have been approved, and to require compliance with them as a regular company procedure.

He expects management to listen to the purchasing viewpoint on matters involving materials, and to grant the purchasing agent a voice in company councils where the subject is appropriate to purchasing knowledge and responsibility.

 The purchasing agent expects management to recognize and reward a job well done.

This goes beyond the elementary requirement of a salary and incentive scale consistent with the magnitude and importance of the purchasing responsibility. It includes proper status for the purchasing function in the company organization and individual opportunity for advancement in purchasing. Without this position and opportunity, management will find it hard to recruit and retain personnel of the caliber equal to the increasingly complex problems of purchasing.

5. Most important, for everything that has gone before depends on this, the purchasing agent expects management to understand the purchasing function. Not merely the act of buying, as summed up in what management expects of the purchasing agent, but the broader modern concept of the purchasing job.

It requires no great argument to convince management that purchasing spends more than other departments, often more than all other departments put together. The irrefutable figures of the company balance sheet establish this fact. The point is that the purchasing agent is not merely a spender. He is a custodian of quality, an investor of funds, a manager of materials, a maker of profits.

In other words, the purchasing agent is saying that management doesn't expect enough of him. In asking for a fuller understanding, he is asking only for the privilege of serving the company more fully and effectively, for the chance to do a complete job, and to grow with the job.

As we progress toward this understanding, it means a closer identification of purchasing with management. And this is a reasonable expectation, for purchasing is a management job in itself, and is a part of the management team.

To buy them intelligently, you've got to do more than just look at catalogs.

# COATED

# **ABRASIVES**

By Peter R. LaFalce, Factory Engineer, Westinghouse Electric Corporation

Photos courtesy Carborundum Company and Behr-Manning Division of Norton Company.



Grading screens, ranging from fine to coarse, sift and separate the grains into exact grit sizes. Abrasives of uniform grain size cut more smoothly.

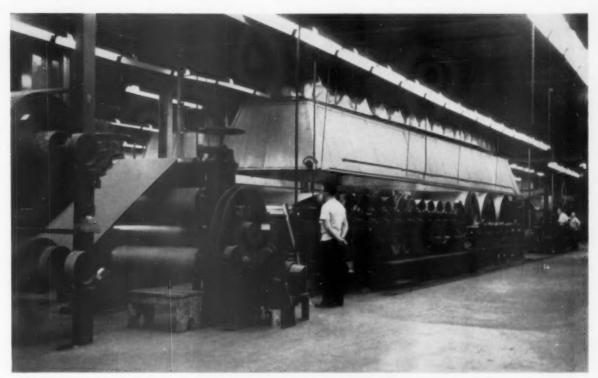
E ACH YEAR the use of coated abrasives in industry increases. Special machinery for its use—not only for surface finishing, but also for basic stock removal—is being marketed at an ever increasing rate. For the purchasing agent, this means the buying of abrasives is getting progressively more complex. To buy intelligently, he must be generally familiar with the types of abrasives available, their applications, and how they're manufactured.

All forms of coated abrasives (such as sand paper, grinding belts, grinding and sanding discs, etc.) are made from three basic materials:

- · backing material
- · bonding material
- · abrasive grains

The backing material is coated with abrasive grains, and the two are held together by a bonding material.

With all three basic materials, the specific variety used must be selected for each application. For example, there are several types of bonding materials. One is used for dry, low heat applications. Another is used where toughness



Cloth backing for abrasives is processed and finished on large machines like this one.

and resistance to water are desired. The choice is determined on the basis of application.

The method used to manufacture coated abrasives (that is, the method used to combine the three basic elements) is also determined by the intended application.

Familiarity with the applications of the basic elements, and the methods of manufacturing are essential to proper selection of coated abrasive products.

#### **Backing Materials**

The material to which the abrasive grains are fastened is the backing. Backing materials commonly used are cloth, paper, fibre, and combinations of the three.

Jeans and Drills are the two weights of cloth used as backing materials. Jeans is a light-weight, flexible but strong cloth. It is used in most woodworking and some metal finishing applications. Drills is a heavier, stronger, less flexible cloth suited for all types of grinding applications.

Fourdrinier and Cylinder are the two types of paper used for backing. Fourdrinier is single ply, flexible and has a high resistance to tearing. Cylinder paper is made of several plies, having its maximum strength in the lengthwise direction thus making it ideal for belts.

Fibre is used in making sanding discs when toughness is desired. Combinations of fibre and cloth are used in sanding discs for high-speed, high strain applications. Cloth and paper combinations are used when a strength and cost between those of cloth and paper are desired.

#### **Bonding Materials**

The bond, in coated abrasives, is the adhesive material which is used to hold the grains together and to the backing. Common bonding materials are glue, varnish adhesives and resins.

Glue is used for dry, low heat applications. When the product is to be used with water and flexibility is desired, varnish adhesives are used. Where toughness and resistance to water, heat and high working pressures are desired, resin bonds are used. However, to use the latter two bonds with water, the backing material must be waterproofed also.

The amount of bond needed to hold the grains to the backing is relatively standard. The amount needed to hold the grains together varies with the application. Generally, the higher the working pressures or the rougher the work surfaces to be ground, the greater amount of bond.

#### **Abrasive Grains**

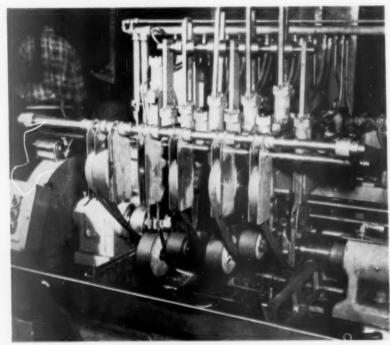
In the manufacture of coated abrasives, both natural and artificial abrasives are used. The natural abrasives include diamond, emery, flint, garnet, corundum, crushed steel, rouge and crocus. The artificial abrasives are marketed under many trade names, but are in general either silicon carbide or aluminum oxide. For general industrial grinding, artificial abrasives are preferred to natural abrasives because of their greater uniformity, and greater tailorability to specific needs.

#### The Manufacturing Process

All the various producers follow the same general procedures in making coated abrasives. The adhesive or bond is first applied and evenly distributed over the surface of the backing. The grains



An abrasive with waterproof paper backing is used for wet sanding automobile tops. The varnish adhesive bonding material is waterproof.



Lapping machines equipped with roll sandpaper are used to finish auto crankshafts. The backing is closed coated to withstand pressures.

are then applied either by gravity or electrostatically. An additional coat of bonding agent, known as "sizing", is applied to form a bond between the individual abrasive grains.

The coated abrasive is next dried then wound into large rolls called "Jumbo Rolls" which contain from 200 to 2000 yards of material and have an average diameter of 36 inches. The Jumbo Rolls are stored to await final processing.

The processing of Jumbo Rolls into consumer products is called "finishing". First, the rolls are flexed by unwinding them over a number of rolls and through sharp bends. This breaks the bond and gives the product the desired flexibility: 90 degree or 45 degree. When the lines run perpendicular to the side edge of the sheet, the flexing is said to be 90 degree. Applications are flat belt sanding and grinding operations. When more pliability is desired, the bond is broken along lines running 45 degrees from each edge of the sheet and crossing each other.

The Jumbo Rolls are next cut and formed into the commercial shape desired. In the making of belts, material which has been slit to width and cut to length is skived (ground) or scythed at the ends and joined with adhesive.

#### The Coating Process

The most important element in abrasive manufacturing is the coating process. There are two kinds of coating: open and closed. A closed coating completely covers the backing while the grains in an open coating are set at some distance from each other, having a surface coverage of from 50 to 70 per cent.

In sanding hard materials such as metals, and where heavy working pressures are required, the closed coat abrasive is used. This type of abrasive has a small clearance between grains and would soon clog up if used on soft, gummy or low-tensile strength materials. Therefore, in low pressure applications where materials are to be sanded, open coated abrasives are used. Open coated abrasives are also more

(Please turn to page 322)



Purchasing Agent Steers—In a year, from the archaic to the unusual in inventory control systems.

# Magnetized Inventory Control Records Cut Manpower Needs

A purchasing agent with just a year's experience brings in new ideas on purchasing and inventory control procedures

By C. D. Francisco

NEW BLOOD always brings new ideas into a department. At Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N.Y., Purchasing Agent Charles Steers, with only one year's experience as P.A. behind him, has installed a combination traveling requisition and perpetual inventory card system that saves 15 hours a week.

"What was formerly an archaic system," says P.A. Steers, "is now one that is giving us real benefit. Anyone can find what he is looking for without a set of directions." Actually, the new system is bi-functional—serves internal tool ordering and outside tool purchasing, with the traveling requisition and perpetual inventory principle applied to both.

Under the old system, some 70 binder books containing hundreds of loose-leaf sheets were used. These were bulky to handle and keep filed. To order a tool from stores, you had to write out a tool order, duplicating pertinent information which was on the loose-leaf sheet. This was time consuming and involved the possibility of errors in copying.

If tools were to be purchased

outside, as in the case of rolled thread dies, a "requisition on purchasing department" form had to be filled out, again returning to the loose-leaf sheet for information. Historical data on the last two orders had to be given to the purchasing department on this form so they could decide the most economical order quantity to buy. All in all it took a lot of hand writing—and three people to run this operation.

But things have changed. Today, one man and one girl control the new system. Two cards do the whole job. One is the traveling requisition, the other a perpetual inventory.

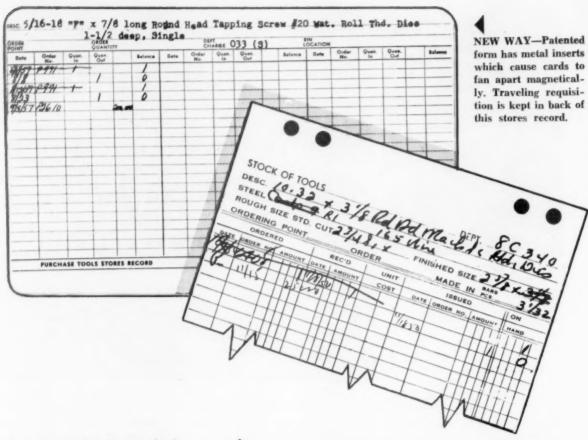
The construction of the cards is unique, too. On either side near the upper corners, there's a 1" x 11/4" metal strip inserted. Solid permanent magnets run along the entire inner sides of the tub files, causing the cards to fan out. When you're looking for a card, the first two or three lines of indexing information are easily visible. You can see and pull out the card you want immediately—no bother with cards sticking together.

"As far as I know," P.A. Steers said, "this Magne-Dex filing system by General Fireproofing is one of the largest such installations in the country."

For outside tool purchases, you simply pull the traveling requisition card from the tub file, check the balance in stock from the perpetual inventory card (which always remains in the file), put it in a plastic envelope and off it goes to the purchasing department. They write three numbers and a vendor code letter on the card, return it to tool stores. Previous purchase information has been posted to the card so there's no need for another form, as in the old system, to be sent to purchasing.

When the order is complete and material delivered, you simply draw a line through the purchase order information and back goes the card to the file. A small red metal tab, clipped to the top edge of the matching perpetual inventory card lets you know when the traveling requisition card is out of file.

When manufacturing needs a tool made in the factory, the



OLD WAY—Perpetual inventory records were formerly kept on forms like this in over 70 binder books.

same two-card system works for them. The only difference is in the indexing information and the route of the traveling requisition. In this application, the traveling requisition card, colored for department identification, is issued by tool stores. The only thing necessary to be posted to the card is the quantity to be made. Then it goes to the tool room foreman and becomes his order to make the tool.

Then, the card really travels. It goes from one machine operator to the next — follows each manufacturing operation. When all operations are complete, and the tool is O.K.'d by inspection, the traveling requisition card is returned to the tool stores clerk. He files it, indexed by department, machine and tool number, until the same tool is required again.

As time goes by, R. B. & W. will see more changes. Purchasing Agent Steers is constantly reviewing all forms for improvement, always on the alert to find and apply modern techniques.



Two people handle R. B. & W.'s inventory control system; three were formerly necessary.

# EW & OTABLE

A quick look at some worthwhile ideas and suggestions for improving your purchasing practice, developed by purchasing people in both industry and government

#### Help on Inventory Control

Correlation of purchasing and inventory control opens the way to substantial savings, according to J. W. Hartung, manager of purchases for St. Regis Paper Company. So he has provided his purchasing agents in all parts of the country with a manual of "Inventory Control Systems and Tables." The 22-page book is a comprehensive guide to the use of two systems-the optimum table system for items on which annual dollar usage is \$6,000 or less, and the inventory worksheet system, for items on which annual usage is over \$6,000. Mr. Hartung is willing to supply single copies to individual purchasing people as long as the supply lasts.



#### **Back Door Selling Curb**

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Back door selling is not a problem for the Lunkenheimer Company.

A strong, well-run purchasing department, backed by management, enforces a rule that no vendors' representatives can talk with shop people without clearing with purchasing first. Other departments go along enthusiastically with the policy-it saves them time and trouble in their contacts with suppliers, since none gets beyond purchasing unless he has something important to say. When purchasing is convinced that it's to Lunkenheimer's advantage to have a representative talk to shop people, it issues a factory visitation permit (see illustration).

#### **Procurement Manual**

The District of Columbia, one of the first cities to have centralized purchasing, is issuing its first procurement manual. Part I, covering procedures and policies for operating personnel, is off the press. Part II, dealing with standardization, cataloging, ware-housing, etc., will be distributed shortly. Part III, primarily of interest to prospective bidders and suppliers to the District, is also in preparation. The manual is prepared in loose-leaf form and will be amended from time to time as policies and procedures are changed. R. G. Wessells is procurement officer for the District.



# The Pulse of Business

DECEMBER, 1957

Any chance of a severe recession is out. Prospect of a really serious business decline never was too strong and economic developments of the last month make it even less so.

Most important development -- so far as its immediate effect on the economy-is the Federal Reserve Board's lowering of the discount rate from 32 per cent to 3 per cent. This action Summary of makes it less expensive for commercial banks to borrow money, e c o n o m i c in turn encourages the banks to lend money at lower rates. It's conditions a definite stimulant to business expansion.

> It was obvious that FRB would eventually move to counter the economic downturn. But the suddenness of its action surprised many. The exact timing of the change in money policy was based on psychological as well as economic factors. was made the day before FRB released its October industrial production figures. Unhappily, these statistics showed the index down two points from September.

Ordinarily the bad news about the production drop would have created considerable economic gloom. As it was, the announcement, though not unnoticed, lost much of its impact.

Easing of the money policy doesn't mean an overnight change in the recession trend, however. Businessmen will take their time about revising expansion plans. But in the long run, FRB's recent action will have the effect of making the recession milder. It also serves as assurance that if recession pressures do continue to build, both FRB and the government will step in quickly to do what they can to perk up the economy.

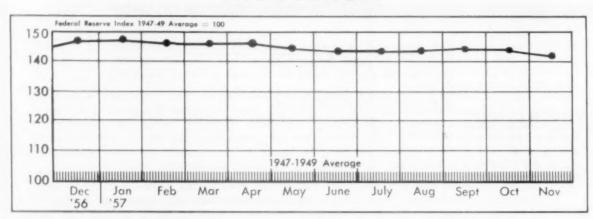
(For the long term--it's a good bet that FRB will tighten up money again much more quickly than it did after the 153-154 recession. Feeling is that easy credit lasted too long after the last recession and that's one reason inflation became such a problem.)

Other recent developments which will help brake the business downslide: The President's announcement about increased sputnik spending and his admission that, if need be, he would rely on deficit financing. Both increased defense spending and deficit spending create problems for the future, but their immediate effect would run counter to recession forces.

It also becomes apparent that a tax cut is probably out for next year. This knocks out what would have been another inflationary force. But overall, the news from Washington means a gentler, briefer business lull. Right now it looks like we're headed for a mild recession of less than a year's duration.

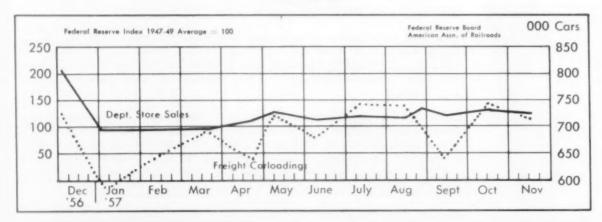
### THE PULSE OF BUSINESS

#### **PRODUCTION**



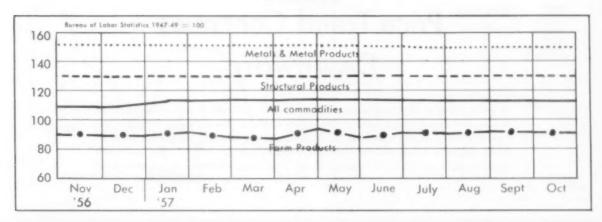
THE SECRETARIAN	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHA	NGE IN YEAR
Industrial Production Index	1947-49-	100 142	144	146	- 1.4	- 2.7
Steel Production (Weekly)	000 net ton	s 1.996	2,088	2.476	- 4.4	-19.4
Electric Power Production (Weekly)		11,860	11.564	11,487	+ 2.6	+ 3.3
Bituminous Coal Production (Weekly)	000 net ton	s 9,775	9,905	10,525	- 1.3	- 7.1
Auto, Truck & Bus Output (Weekly)			56,762	138,295	+263.9	+ 8.3
Petroleum Output (Daily Average)		6,570	6,675	6,857	- 1.6	- 4.2

#### TRADE



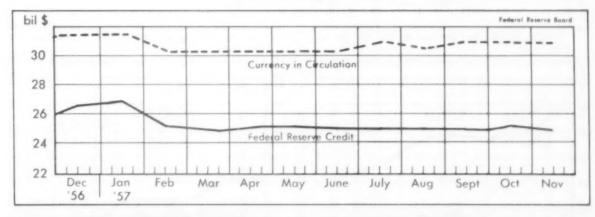
BASE	LAT	EST	MONTH AGO	YEAR AGO	% OF CHA	ANGE IN YEAR
All Weekly						
Dept. Stores Sales Index (Fed. Res.) 1947	7-49 = 100	122	127	124	-3.9	-1.6
Commercial Failures (Dun & Bradstreet) no.		250	261	271	-4.2	- 7.7
Freight Carloadings cars	713	,994	747,647	800,272	-4.5	-10.8
Miscellaneous Carloadings cars		,039	358,411	388,205	-1.5	-9.1

### **PRICES**



	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH YEAR	
All Commodities (BLS)			118.0	115.8	- 0.2	+ 1.6
Farm Products	1947-49-100	150.8	91.0 152.2 135.2	88.4 152.2 131.5	+ 0.6	+3.5 $-0.1$ $+2.9$
Nonmetallic Minerals – Structural Steel Billets (Pittsburgh)	net ton	\$77.50 33.00	\$77.50 38.00	\$74.00 58.00	$+\ 0.1$ $0$ $-13.2$	$\begin{array}{c} + 2.9 \\ + 4.7 \\ -43.1 \end{array}$
Steel Scrap, heavy melting, Pitts	lb.	.27	.27	.36	0	-25.0 $-20.4$

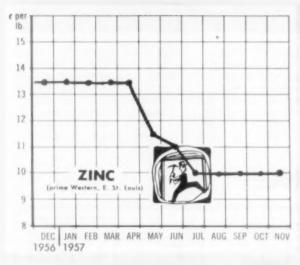
### **FINANCE**

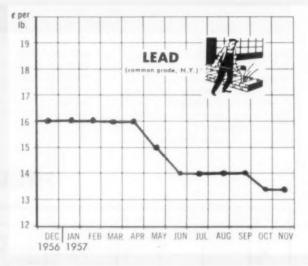


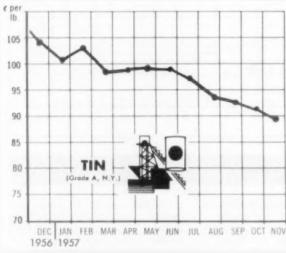
EVER DESIRED	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH YEAR	
Stock Prices (Standard & Poor's)	mil 8 mil 8	40.67 10,873 25,225 31,114	40.96 10,661 25,563 31,129	46.73 9,528 25,762 30.964	$ \begin{array}{r}  -0.7 \\  +2.0 \\  -1.3 \\  -0.1 \end{array} $	$-13.0 \\ +14.1 \\ -2.1 \\ +0.5$

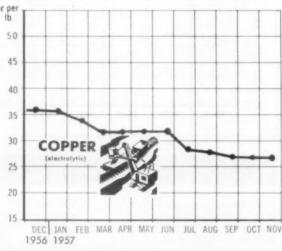
## Price Trend Continues Downward

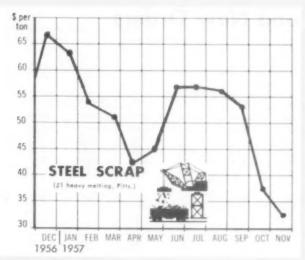
A quick glance at the charts on this page and there's no doubt about what's happening to the prices of major commodities—they're moving down. One of the few exceptions was custom smelters' copper which rose half a cent but then weakened. Zinc market continues in the doldrums. Latest statistics show that stocks of slab zinc in producers' hands now total 155,925 tons. This is the highest level zinc stocks have reached in the last three years.

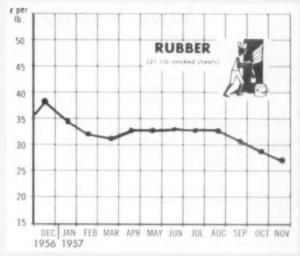


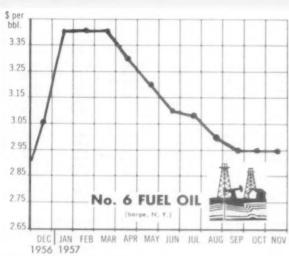


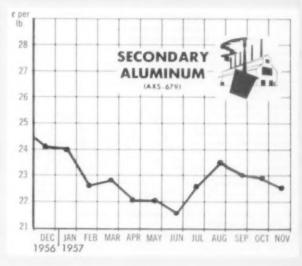


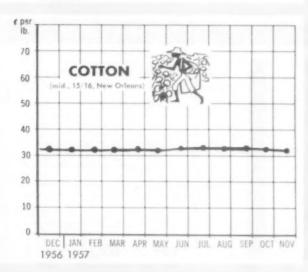


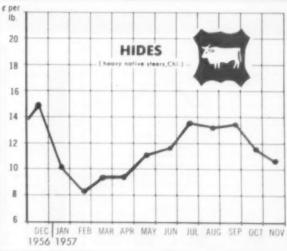










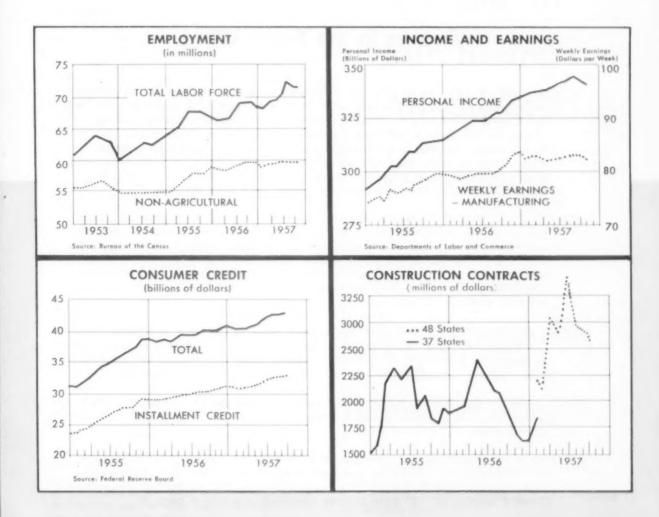


### THE PULSE OF BUSINESS

### Sales, Inventories and New Orders

Value of Manufacturers' Sales	19	56	1957			
Seasonally Adjusted (Millions of Dollars)		Sept.	June	July	Aug. (R)	Sept. (P)
All manufacturing industries	27,588	27,146	28,142	29,030	28,638	28,236
Durable-goods industries	13,723	13,449	14,207	14.573	14.297	14.114
Primary metal	2.144	2.334	2.289	2,447	2,362	2,117
Fabricated metal	1,503	1,440	1,492	1,605	1,520	1,538
Machinery	4,143	4,058	4,259	4,447	4,231	4,220
Transportation equipment	2,912	2,696	3,241 1,076	3,251 957	3,448 925	3,513
Stone, clay and glass	1,150 751	1,122 727	741	736	708	652
Nandurable-goods industries	13,865	13.697	13.935	14.457	14.341	14,122
Food and beverage	4.182	4.109	4,183	4,323	4,357	4,282
Tobacco	328	329	382	375	354	382
Textile	1,128	1,125	1,063	1,089	1,072	1,002
Paper	1,931	859 1,875	1.894	896 2.008	915	1.969
Chemical Petroleum and coal	2.671	2.629	2.780	2,991	2.920	2.808
Rubber	467	461	458	514	514	n.a
Book Value of Manufacturers' Inventories						
Seasonally Adjusted						
(Millions of Dollars)						
All manufacturing industries	50,378	50,842	53,853	54,093	54,203	54,112
Durable-goods industries	29,120	29.451	31.438	31,696	31.742	31.741
Primary metal	3.632	3.687	4.207	4,245	4,326	4,365
Fabricated metal	2,938	3,002	3,077	3,146	3,151	3,144
Machinery	10,008	10,089	10,601	10,622	10,609	10,638
Transportation equipment	7,141	7,280 1,870	7,919	8,038	8,035	7,935
Lumber and furniture Stone, clay and glass	1,135	1,129	1,254	1,239	1,210	1,242
Nandurable-goods industries	21.258	21,391	22,415	22.397	22.461	22,371
Food and beverage	4,768	4.831	4.882	4.804	4.805	4.711
Tobacco	1.896	1,870	2.064	2,038	2,024	1,984
Textile	2,608	2,648	2,612	2,642	2,649	2,634
Paper	1,317	1,320	1,442	1,430	1,429	1,410
Chemical Petroleum and coal	3,475	3,504	3,692	3,728 1,045	3,737	3,757
Rubber	1,047	1,038	1,027	n.a.	1,074	n.o.
Manufacturers' New Orders (Seasonally Adjusted)						
All Manufacturing Industries	31,078	26,767	27,055	27,276	27,325	26,742
Durable goods industries	17,343	13,042	13,249	13,055	13,160	12,603
Nondurable goods industries	13,736	13,725	13,806	14,271	14,165	14,139





### NEW ORDER INDEX INDUSTRIAL SUPPLIES AND MACHINERY



### Straws in the Trade Wind

- MORNING LINE ON '58—Among the early forecasts on the '58 business outlook were these: steel production will be down to 110-111 million tons compared with this year's anticipated 115 million; auto output to be close to '57 levels totaling between 6.1 to 6.3 million cars. And F. W. Dodge expects construction for housing and government—owned facilities to more than offset prospective declines in industrial and commercial building in '58. Dodge predicts construction contracts will total \$33.8 billion—five per cent over this year.
- FREIGHT COSTS SLATED TO GO UP—P.A.'s can look forward to higher shipping rates on the railroads next year, as increases are in the offing for selected commodities along with new or greater service charges. Rate hikes will be mainly on items which can't be shipped more economically via highway or waterway competitors. The rails claim that the hikes granted earlier this year were inadequate to meet wage, tax and car service costs.
- HARDER SELL FOR TITANIUM—P.A.'s can expect more calls from salesmen boosting titanium. The industry is concerned about its almost complete dependence on hot and cold aircraft, would like to develop new markets.

  Most logical targets: the chemical and electronics industries.
- PRICE HIKES ON ELECTRICAL EQUIPMENT—Electrical equipment industry is making noises that sound like price increases. It's the cost-profit squeeze story again.
- ONE REASON PURCHASING'S EASIER—Most P.A.'s haven't had much trouble this year getting the materials and equipment they wanted when they wanted them. One of the reasons: fewer workers were out on strike during the first 9 months of '57 than in any comparable postwar period.
- TRADE BALANCE BETTER—AND WORSE—Latest report shows the excess of U.S. exports over imports is narrowing. This is good because it puts less pressure on dollar reserves of foreign countries. But it's bad too, because the narrowing of the gap is the result of our exports diminishing faster than our imports rather than an overall increase in trade.
- GERMAN STEEL PRICES RISING—Pressure was building for an increase in German steel prices. Behind the price boost is the recent jump in coal costs.
- GOVERNMENT SPENDING TO HIT \$100 BILLION—New York Chamber of Commerce predicts government spending in the next 10 years will increase more than a third. This would put it at the \$100 billion level.

A LL ENTERPRISE, large and small, industrial and commercial, require and use purchasing administration. Here is something so broad and common that we hardly stop to think about it. But no longer. Our purpose is to define it, outline its scope or areas of operation, and show how your "administration" as compared with "purchasing" promotes successful performance within the purchasing department. Let us take this general concept—and be as specific as possible in every instance—to develop a sharp purchasing tool.

### **Definitions**

For a specific approach we will have to develop our own building blocks:

Administration is the solution of management problems.

2) Management is the

a) use of resources,

b) application of technical and functional methods of conduct, and

 c) leadership of people to attain a desired goal.

3) Purchasing's goal is to perform for maximum consistent contribution to company profit through:

a) low cost, timely procurement,

b) minimum functional expense, andc) sound vendor-customer relations.

Here are all the elements of a business operation. And the words are familiar: resources, methods, people. And for procurement: purchasing, expense, and reciprocity. Purchasing administration deals with all.

### **Operation Analysis**

What is the difference between "administration" and "management"—between a "purchasing administrator" and a vice president for purchasing, or purchasing agent? Does one give information and advice, and the other make decisions? Does one guide while the other supervises and directs? "Yes", to both; but this is not the whole story.

For a more accurate picture we should compare a purchasing department with one for engineering, or production, or sales—or with an entire manufacturing plant. They all have something vital in common. For instance, from the chart on page 113:

All business, all manufacturing, and every operation of management, plant, shop, or machine have both "process" and "non-process", or "professional" and "administrative", performance. The lift-truck that supplies pallets and removes metal shapes is non-process in relation to the stamping machine. But the lift-truck likewise has a technical job to do, and its maintenance, repairs, and lubrication is a non-process function. Your legal department has its lawyers, or professional people. That is, they are professional in doing a legal job, but administrative in serving company sales or manufacturing. Again, the

# A Guide to Purchasing Administration

By Eugene S. Page

legal librarian is administering to the need for a current, available source of reference. Everywhere there is separation of job action and job service. Those acting functionally make the decisions, and control and use the necessary resources, methods, and people. Administration supplies and services these elements.

Purchasing administration applies minimum resources, develops and installs operative methods, and organizes and trains personnel to insure consistent performance, by specialists, for low cost, quality acquisitions, irreducible expense, and effective public relations.

This takes in the entire field of industrial purchasing — other than the art of negotiation, knowledge of markets, responsibility for major purchasing decisions, and the work of expediting. Let us look briefly into each phase of purchasing administration.

### Resources

The resources of a purchasing department are not measured in land, buildings, production facilities, or dollars. They are much more intangible, and therefore more difficult to acquire, to evaluate, and to maintain. Like all service functions, industrial purchasing is made up of people. Its resources are useful but non-productive office facilities plus wealth of available experience. This last is both the living experience of the individual, or procurement know-how, and the inanimate records of past months and years with essential data on markets and sources of supply, manufacturing requirements and specifications, methods of commitment, and prices paid.

The purchasing administrator must be concerned directly with all three types of resources:

Facilities. First need is for adequate office space, properly arranged, well lighted, and accessible to vendor representatives. Allocation of sufficient private offices and conference tables for

interviewing are a special necessity.

Desks, typewriters, files are the common office tools. But purchasing also requires facilities for duplicating repetitive information from one typing—based on the fact that there is a large proportion of constant data beginning with the purchase requisition through inquiry, bid tabulation, purchase order, receiving report, inspection certificate—as well as procurement, inventory, and accounting records—on both recurring and non-recurring items. Other tools include dictating equipment, tape recorders for conferences, and projection equipment for training purposes.

All these are a part of the problems of purchasing management— and the direct concern of

the purchasing administrator.

Personnel. The purchasing executive selects and hires his commodity specialists and expediters—and their ability, of course, is a product of prior education and experience, and personality. However, there is a large area of purchasing administration here.

First, the administrator will act in a personnel capacity—not to replace the personnel department—but to write job descriptions and personal specifications, to interview and screen applicants, and to select those for conferences with others in the

department.

Second, purchasing administration will maintain a continuous training program, beginning with a flow of information on the company, on markets and commodities, and on improved or new methods of negotiation, commitment, and expediting. Also included will be occasional conferences and vendor product demonstrations. Data on the company's own products, its sales departments, and its markets likewise will be supplied.

And if yours is a multiplant or multidivisional operation, a yearly meeting of purchasing agents

will be arranged.

Purchasing administration has an important job to do in maintaining information and programs for the selection and training of personnel.

Records. Every department needs a records management program that includes:

1. Filing methods and equipment,

- 2. Vital records preparation and preservation,
- 3. Schedules for retention and destruction,

4. Storage systems and facilities.

Purpose is to maintain only those records essential to:

- 1. Current and future job performance,
- 2. Periodic reports and statistics,
- Internal audit of authorizations and methods,
- 4. Requirements of law.

For industrial purchasing, records management includes:

 Purchases, by purchase orders, with supporting requisitions, inquiries, bid tabulations, purchase orders, vendor acknowledgements, shipping promises, completions, and invoice copies. (With an additional copy of every purchase order crossfiled by order number, vendor, or commodity purchased.)

Purchases by contract, supported as above, with original copy filed in the corporate

secretary's office.

3. All other records, including:

 a) General and inter-departmental correspondence,

Standards—of purchased items and operating methods,

 Markets, sources of supply, and special commodity studies.

The methods and management of procurement records accumulation, use, retention, protection, and disposition are the direct concern and responsibility of purchasing administration.

### Organization

In a small business or a static economy, problems of organization tend to be routine and, with time, to settle themselves. Where there are few people or little change in the jobs that people do, their relationships are stable and known. Each man to his own work, and that's that.

But in our day we have expanding corporations, mergers, and diversification; with multiplant operations under different profit-making divisions. With the growth of decentralized management, planning and administration are a vital

necessity.

What does corporate organization do?

- Establishes organization "levels" to each of which is delegated the authority to make decisions for action, within limits based upon:
  - a) Interests—
     Involvement of personal rights and shares of stockholders and employees;
  - Scope— Number of organization units brought into action;
  - c) Impact—
    Effect upon financial, physical, and personal resources.
- Determines job positions within each organization level, and delegates authority for specific types of action.
- Assigns each employee to a job position.
   Purchasing organization is dependent entirely upon two factors in a company:

1. Corporate Organization. Total organizational structure, beginning with the placement of responsibility for profit below the president. That is, the degree of decentralization of management, if any, and its separation into two or more profit centers, each of which may include procurement.

2. Purchasing Organization. Organization and inter-relationships of all purchasing forces in the company. In a large concern this involves procurement at corporate, divisional and plant levels and so-colled "line and staff" relationships with varying degrees of both "administrative" and "functional" reporting.

It cannot be over-emphasized that a purchasing

OPERATION OF BUSINESS	PROCESS	PROFESSIONAL	CONTROL AND USE	RESOURCES
MANUFACTURING PLANT	_		_	METHODS
SHOP OR MACHINE	NON PROCESS	ADMINISTRATION	SUPPLY AND SERVICE	PEOPLE

organization (like all others) begins at the top. The responsibility and functions of the executive head determines the strength and actions at all lower levels.

When the purchasing organization is clearly known, two further steps are required:

1. Authority Delegation. Authority to commit the expenditure of company funds in a corporation is delegated by the board of directors to the president, and by him to the purchasing executive. The purchasing executive redelegates a portion of his authority to assistants or other purchasing agents. In a decentralized operation with "autonomous" profit units, agreement by those responsible for profit usually is required, and desirable, prior to such purchasing authority delegations. The delegations should be in writing, formal and specific.

2. **Job Descriptions**. Every important purchasing position should be covered by a job description. After all, a man has to know what is expected of him; and you, likewise, want to be sure that he knows. In addition to an organization plan and level, every position has at least three elements:

a) General Responsibility—
 The goal of total job performance.

b) Functions—
 Specifications to be taken; duties of the position.

 Authority— Authority to purchase and lease (as separately delegated); plus others related to policies, working forces, and employment.

Purchasing administration has a full schedule in the development and definition of purchasing organization. If these are intangible concepts, remember that they are for people who must understand and accomplish. Be clear, concise, and direct. Be brief. Here is a top spot in the job of purchasing administrator.

#### Policy

We said that one responsibility of purchasing administration is to insure consistent performance. This, of course, depends on the capabilities of people in procurement and elsewhere. But it also depends on "policy".

This word, like others such as "coordination" and "liaison", is frequently used, but often not clearly understood. And a good definition is hard to come by. We suggest:

"Policy is intent that establishes a basic goal of accomplishment which all actions will strive to attain."

What are your purchasing policies? To buy at the lowest price? To obtain three or more bids always? To favor local sources of supply? To hire only graduate engineers for industrial procurement? No—these, or others like them would be only means to an end.

Basic purchasing policy is to conduct the procurement function in a manner to create and maintain the maximum profit potential.

Such a policy demands that operating and inventory requirements of specifications and time, selection of competitive sources of supply, evaluation of price, procurement expense, and public relations all be brought into optimum balance.

On the policy matters, the purchasing executive makes the decisions. But the work of administration analysis, appraises, and develops to

the point where top judgment and decision will be applied. Basic policies, carefully expressed, are the guideposts to purchasing. This is important work for purchasing administration.

### Methods

Industrial purchasing is both an art and a science, like any profession a true combination of skill and mechanics. Purchasing administration helps develop the art, supports and skills, and provides the machinery.

Methods—or purchasing procedures—are the means by which the procurement job is accomplished with speed and efficiency. Basically:

"Procedure is a method of action, specifically authorized, to perform a function in support of policy."

Our policy has been stated. The function is procurement. Action is in four steps:

1. Requisitioning—Decision to buy.

2. Purchase-Decision of how to commit.

3. Receipt-Decision to accept.

4. Invoice Approval-Decision to pay.

Each of these requires an authority to act and provision for communication, flow of paper, and records.

The purchasing administrator is the fellow that ties this all together. Policy is needed: he develops and promotes. Organization is required: he works here, establishing levels and positions, and finally authority delegations. With these under control procedures naturally follow, combining authority and skills in the art of purchasing.

### Procurement

Our definition for purchasing administration sets up a goal of "... performance, by specialists, for low cost, quality acquisitions ..." Well, the specialists do it all right, but the administrator gives them a long, helping hand.

First, they rely on the policy, organization, and methods already discussed. What else can purchasing administration do? The following, for instance:

1. Resolve the problems of written communication and order writing:

 a) By adequate, trained stenographic and clerical staff;

 By methods that provide both procedures for minimizing small purchases and suitable printed forms for routine purposes;

e) By a proper system of duplicating common or repetitive information from one typing for use from requisition for purchase to purchase, receipt, and invoice approval;

d) By developing still further efficiencies to remove from the purchasing department all possible "clerical work", for instance a system in which the P. A. negotiates term contracts or "blanket-orders", against which using departments will plan their own "releases" as required.

Provide references and information by which the P.A. and staff will know both internal manufacturing requirements and procurement problems, and also major markets and sources of supply. This might include:

 a) Quarterly and yearly purchasing reports of both procurement statistics and de-

partment performances;

 Sound records management of purchase orders and also of invoice copies. (Nothing shows the complete, accurate details of unit and total prices as well as the invoice itself);

 A reference library of books and current publications—technical, commercial, and specific products and equipment.

- Promote, coordinate, and participate in those endeavors that can make an industrial purchasing department truly outstanding; such as:
  - a) A standardization program involving engineering, manufacturing, materials handling, purchasing, and quality control, with their representatives meeting and acting in a cooperative effort;

 A planned approach to "value analysis", both in standards development and in treatment of purchase requisitions, consulting production experts and sales leaders within the company and outside;

c) A make-or-buy committee, with the purchasing department taking a thoroughly active role along with production sched-

uling and manufacturing;

d) Inventory control and reduction, with purchasing constantly striving to improve its buying arrangements and sources to permit of lower stocks on hand with equal assurance of supply.

Yes, there is no end of ways your purchasing administrator can help provide and maintain "low cost, quality, acquisitions". Truly, he is

essential to the buying team.

### Expense

Just a word about expense. With all that money your department is spending you would think the cost of purchasing might be rather minor. But such is not the case. The expense of operating a purchasing department is just as important as any other. Why should management pay more than a fair, reasonable, competitive price for procurement service, any more than the P.A. for what he buys?

Unfortunately, there is no hard and fast rule by which to measure the cost of purchasing. A department that makes little or no actual "savings" to contribute toward profit may well be "expensive" regardless of its cost. And, of course, the reverse is true. Perhaps the most common yardstick is the average expense (primarily salaries) of spending a dollar—a device that recognizes the volume of procurement, but which must be carefully interpreted in relation to the types of items bought, the relative size and frequency of purchases, and problems of the market.

W HEN THE purchasing agent buys welded carbon, alloy or stainless steel tubing, he can save time and errors by specifying according to the service it must perform.

The outline accompanying this article will help your supplier furnish the welded tubing best suited to your requirements. If the applicable information in the outline is supplied, the proper tubing for the job can be selected easily.

Also to help the purchaser obtain the proper tubing for his purpose, size tolerances, the permissible variations from the nominal dimensions in which the tubing is ordered, have been established by the Formed Steel Tube Institute. The acceptable OD and ID tolerances for cold rolled carbon steel round welded mechanical tubing are given in Table 1, as they appear in the latest edition of the Handbook of Welded Steel Tubing as published by the Formed Steel Tube Institute; Table 2 shows the OD and ID tolerances for hot rolled carbon steel round welded mechanical tubing, appearing in the same handbook. Tolerances for wall thicknesses (often referred to as "gage") are the same as those specified by the AISI for the applicable flat rolled steel.

For special applications, tolerances closer than those shown in all three of the tables are available by arrangement between consumer and producer.

### How to Buy Welded Steel Tubing

Based on data developed by the Product Development Committees of the Formed Steel Tube Institute, Pittsburgh, Pa.

### SIZE TOLERANCES (Inch) ROUND WELDED STAINLESS STEEL TUBING

The acceptable OD and ID tolerances for round welded stainless steel tubing are shown as they appear in the latest edition of the Handbook of Welded Steel Tubing.

	O.D.	I.D.
Up to 3/2" O.D. exclusive	± .001	± .001
3/2" to 3/6" O.D. exclusive	± .0015	± .0015
3/6" to 1/2" O.D. exclusive	± .003	± .005
1/2" to 1" O.D. exclusive	± .004	± .006
1" to 11/2" O.D. exclusive	± .005	± .007
11/2" to 2" O.D. exclusive	± .006	± .008
2" to 21/2" O.D. exclusive	± .007	± .010
21/2" to 31/2" O.D. exclusive	± .010	± .014
3½" to 5" O.D. inclusive	± .015	± .020

These tables will go far toward helping the purchasing agent order the proper welded carbon, alloy or stainless steel tubing for a particular service. All tables and technical data are taken from the latest edition of the Handbook of Welded Steel Tubing.

### ORDER INFORMATION

- SIZE: Specify any two of these three dimensions: Outside diameter (OD); inside diameter (ID); wall thickness (sometimes called "gage"). Birmingham Wire Gage (BWG) generally is used in the welded tube industry. When no gage title is specified on an order the gage is assumed to be BWG. To avoid confusion, wall thickness should be specified in decimals of an inch as well as by gage number.
- TOLERANCES: Indicate dimensions that require close tolerances. Welded tubing can be held within published tolerances on any two of the three dimensions shown under "Size."
- **LENGTH:** Give the lengths desired, but specify whether the tubing is wanted in random lengths, average, multiple or exact cut lengths.
- SHAPE: Specify whether round, oval, square, rectangular, or other special shape is required. Give desired radii on corners of square or rectangular tubing, together with the tolerances for convexity or concavity of the tubing.
- **SPECIFICATIONS:** Give number, date, and name of agency issuing the specification, together with any exceptions.
- END USE: The tube user should advise the tubing supplier of the ultimate end use of the tubing involved. Adjustments in tube processing usually can be made to furnish a product to meet the most critical of the varied fabrications required by the user.
- WELD FLASH: When size and wall thickness permit, on carbon steel tubing specify if inside weld flash is to be controlled—see Tables 1 and 2. (Outside weld flash always is removed.) On Stainless steel tubing weld

TABLE 1. SIZE TOLERANCES (Inch)
ROUND WELDED MECHANICAL TUBING. COLD ROLLED CARBON STEEL

Size Dance	B.W. Flash-In Gage O.D.		Flash Controlled (to .010" Maximum) O.D.	Flash Controlled (to .005 " Maximum) O.D. I.D.		
Size Range	Gage	O.D.	O.D.	O.D.	1.1.	
1/4 to 3/8 Inc.	22-14	± .0025	*****	± .0025	± .009	
Over 3/8 to 5/8 Inc.	22-16	± .003		± .003	± .005	
Over 3/8 to 5/8 Inc.	14-12	± .003		± .003	± .009	
Over 5/8 to 11/8 Inc.	22-14	± .0035		± .0035	± .005	
Over 5/8 to 11/8 Inc.	13-11	± .0035		± .0035	± .008	
Over 11/8 to 2 Inc.	22-14	± .005	± .005	± .005	± .006	
Over 11/8 to 2 Inc.	13- 9	± .005	± .005	± .005	± .008	
Over 2 to 2½ Inc.	20-14	± .006	+ .006	± .006	+ .007	
Over 2 to 2½ Inc.	13- 9	± .006	± .006	± .006	± .009	
Over 2½ to 3 Inc.	20-18	± .008	± .008	± .008	± .012	
Over 21/2 to 3 Inc.	16- 9	+ .008	± .008	± .008	± .010	
Over 3 to 3½ Inc.	20- 9	+ .009	± .009	± .009	± .012	
Over 3½ to 4 Inc.	20- 8	+ .010	± .010	± .010	± .015	
Over 4 to 5 Inc.	16-14	± .020	± .020	± .020	± .020	
Over 4 to 5 Inc.	13- 8	± .015	± .015	± .015	± .018	
Over 5 to 6 Inc.	16- 8	± .020	± .020	Not Produc	ed	

bead height is controlled within the limits of the permissible wall thickness variations.

CHEMICAL COMPOSITION: If possible, give analysis or trade name of the steel grade desired, or give any recognized reference designation.

MECHANICAL PROPERTIES: Give special properties, such as tensile strength and yield strength.

FINISH: Specify the type of surface finish required.

FABRICATION: Exact knowledge of the application and methods of fabrication always are helpful in the determination of the proper tubing to supply. Provide a print of the finished part; state if tubes are to be swaged, bent, expanded, upset, flared, etc.

CORROSIVE CONDITIONS: Give the corrodent, whether it will contact the OD, the ID, or both, as well as concentration, pressure and temperature involved.

MACHINING ALLOWANCES: Give required allowances for finishing, and whether it should be on the OD, the ID, or the length; give finished dimensions; tell manner of chucking, whether true to OD or ID; whether allowance is required for grinding, threading or telescopic fit.

SPECIAL INFORMATION: Cover billing instructions, heat analysis reports, number of invoice copies required, etc.

PACKAGING AND SHIPPING: Normally, on random length specification, general practice is to ship 10 per cent more or less than the quantity ordered. Standard packaging and loading practices have been developed for welded steel tubing; unless otherwise specified, these will be followed. Specify when order is wanted, and when and how to ship. Is a special carrier or other shipping method required?

TABLE 2. SIZE TOLERANCES (Inch) ROUND WELDED MECHANICAL TUBING. HOT ROLLED CARBON STEEL

Size Range	B.W. Gage	Flash-In O.D	Flash Controlled (to .010" Maximum) O.D.	Flash Controlled (to .005" Maximum) O.D. I.D.
3/4 to 11/8 Inc. Over 11/8 to 2 Inc. Over 11/8 to 2 Inc.	16-11 16-14 13- 7	± .0035 ± .005 ± .005	± .005 ± .005	± .0035 ± .012 ± .005 ± .016 ± .005 ± .019
Over 2 to 2½ Inc.	16-14	± .006	± .006	± .006 ± .016
Over 2 to 2½ Inc.	13- 6	± .006	± .006	± .006 ± .016
Over 2½ to 3 Inc.	16-14	± .008	± .008	± .008 ± .012
Over 2½ to 3 Inc.	13- 4	± .008	± .008	± .008 ± .010
Over 3 to $3\frac{1}{2}$ Inc.	16-14	± .009	± .009	± .009 ± .010
Over 3 to $3\frac{1}{2}$ Inc.	13- 4	± .009	± .009	± .009 ± .020
Over $3\frac{1}{2}$ to 4 Inc.	16-14	± .010	± .010	± .010 ± .017
Over $3\frac{1}{2}$ to 4 Inc.	13- 4	± .010	± .010	± .010 ± .021
Over 4 to 5 Inc. Over 4 to 5 Inc. Over 5 to 6 Inc.	16-14	± .020	± .020	± .020 ± .020
	13- 4	± .015	± .015	± .015 ± .020
	16- 5	± .020	± .020	Not Produced

wall tolerance only, in which the height of the remaining welding flash is controlled to not exceed .010".

Flash-In: Tubing produced to OD and wall tolerances only, in which the ID welding flash does not exceed the wall thickness or 3/32", whichever is less. less. less. Tubing over 1½" OD is produced to OD and wall, or OD and ID tolerances and so controlled that the height of the remaining ID flash does not exceed .005". Any remaining ID flash does not exceed .005". Any remaining ID flash is exceed .005" and wall, or OD and ID tolerances and so controlled that the height of the remaining ID flash does not exceed .005". Any remaining ID flash is exceed .005". Ovality should not exceed the total applicable OD tolerances.

### How to Save On Services

By Harold Dewyk, City Purchasing Agent, Dearborn, Michigan

Is a shortage of labor complicating the problem of maintenance of your plant and its grounds? Maybe leasing of services is one answer. The City of Dearborn tried contracting for window washing, treetrimming etc., and not only beat the manpower shortage but saved a lot of money.

Abstract of an address given at the National Institute of Governmental Purchasing annual meeting in Cincinnati, October 8, 1957.

O UR EXPERIENCES had been primarily in contracting for service and leasing of equipment, confined to the short-term rental of heavy construction apparatus. We went into contracting for services mainly because of the manpower shortage, but our experience shows that this method of operation is a tremendous money saver in itself. We are now surveying the possibility of contracting for even more than the six activities now under contract.

A few years ago a shortage in labor, caused by the presperous conditions in the automobile and steel industries began to endanger the efficiency and high standard of municipal services. A review of the manpower situation in major services indicated that the solution would be to contract with private companies for the work. The city of Dearborn now has in force contracts for: window washing in all municipal buildings, tree trimming, painting of all public buildings, painting and striping of crosswalks and cross lines for traffic control, janitor services and leasing of heavy

equipment. A car washing contract is pending.

Window washing was primarily a function of the janitor. Because these are employees mostly of middle age, it became quite a problem for them to climb ladders in all kinds of weather to perform these duties. This resulted in many accidents. So we prepared specifications and took bids on window washing for 11 municipal buildings at various locations in the city. This year our contract price is \$320.00 per month for this service for all 11 locations. We have had this service since 1949 at less than the cost of one laborer a year. We have saved thousands of dollars on this one item.

In 1954 we started a survey of our shade trees, of which we had 40,000 on our streets, at an estimated value of about \$15 million. They were badly neglected because our parks division crew could not keep up with the tremendous expansion of the city. We compared the costs of adding additional men to our crews and contracts with private concerns.

After a very careful study by a committee, it was decided to contract the work.

The past two years that this contract has been in effect the contractor has performed work that would have taken our own crew about 8 to 10 years to complete. Again a savings of thousands of tax dollars, and "more value for the tax dollar."

Next we surveyed the painting and striping of crosswalks and stop lines for street traffic control, and a complete record was maintained of labor, material, and equipment costs for a period of one year. The complete costs ranged from 12 to 15 cents per lineal foot of striping. We again prepared specifications and bids were taken for about 120,000 feet of striping. The low bidder quoted 7 cents per foot for the first striping and 61/2 cents per foot for the second striping. Our cost was almost cut in half and

all the work completed in two weeks as compared to two months work with our own crews.

Now we were fully convinced that many services of a municipality could be done better, more efficiently, and for less money than the city could do itself. We decided to add private contractors for janitor services. We prepared specifications and advertised for bids for one building which the city was leasing for offices. It required the service of one full time male janitor and one full time female janitress plus the supplies and equipment needed to work with. A company that specialized in janitor services, undertook this contract for \$250.00 per month. To date the service has been excellent. As our janitor help retires, or resigns, we plan to replace these people with janitor service contracts, building by building.

A survey of car washing of city passenger vehicles showed that four car washers in two locations did about 13,000 car washes a year at a cost of about \$18,000.00. Bids for this work ranged from 75 cents per wash to 90 cents per wash. This shows a possible saving of about \$6,000.00 to \$8,000.00 per year. This contract is now under consideration by the city council pending location of these wash racks.

Next we studied the idea of leasing heavy equipment or purchasing it outright and hiring operators and maintenance men to maintain it. Our engineers estimated that we had about 1,600 working hours use for this equipment each year. The equipment included: 4 Model C Letourneau Tournapulls; 2 D-7 Caterpillar & Scrapers; 2 D-8 Caterpillar Pushers.

This would entail the expenditure of about \$150,000.00 in equipment and the hiring of a crew of skilled operators and maintenance men. We prepared specifications and took bids for this specialized service, and again saved many thousands of tax dollars per year.

### SPECIFICATIONS FOR RENTAL OF EARTH MOVING EQUIPMENT

The equipment required in accordance with these specifications shall be furnished on a rental basis for use at Camp Dearborn loss ted on General Motors Road, approximately one mile west of Milford, Michigan. The work to be done will consist of earth moving, rough grading and other like work in accordance with instructions by the Director of Public Works of the City of Dearborn. All work required will be done on City of Dearborn property at the above mentioned location.

The contractor shall operate any and all of the equipment specified and the work shall be supervised by one foreman furnished and compensated by the contractor; such foreman shall be capable of doing his own instrument work for setting line and example.

All equipment specified shall be available immediately after award of the contract and work shall commence at once thereafter.

### Equipment required will be:

Four (L) Model "C" Le Tourneau Tournapulle

PROFUSAL FOR WINDOW CLEANING

To the Honorable City Council, City of Dearborn, Michigan.

#### Gentlemen:

The undersigned, as bidder, declares that he has familiarized hisself with the specifications for window cleaving, which he understands and accepts as sufficient for the purpose, and agrees that he will contract with the City of Dearborn to perform the work specified and will accept in full payment, therefore, the following

For each complete cleaning, monthly. Includes all windows in all buildings and structures listed, except the Motor Transport Garage at Martwell Yard, where only the office windows are to be cleaned:

Two hundred thirty-five and 00/100----- \$235.00 per Price - Written Figures south

For each cleaning, quarterly. Includes all windows in the Motor Transport Garage

#### SPECIFICATIONS FOR TREE TRIALING

- Remove all dead wood as well as broken or interferring branches. Where branches of street trees crast buildings, chimneys, and the like, they will be cleared.
- 2. For proper clearance of vehicular traffic and also for efficient street lighting, effective clearance will be at least fifteen feet. Fedestrian clearance over sidewalks will be at least 10 feet, remembering that branches hang lower when vet or covered with snow and ice.
- Necessary tree resovals will be done along with the routine trisking, when deced necessary on the basis of safety, vigor or appearance.
- Specialized forms of tree care such as bracing, cabling, cavity work, etc.
   na; also be performed at the same time, when necessary, to prevent damaged
   limbs, or penetration of insect and disease organisms.

### SPECIFICATIONS FOR PAINTING AND STRIPING OF CROSSWALKS AND STOP LINES ON THE STREETS OF THE CITY OF DEARBOOM, MICHIGAN

#### GENERAL:

The requirements under these specifications will be the furnishing of all labor, tools, equipment and materials necessary for the painting and striping of Crosswalks and Stop Lines at the various locations on the City streets.

#### SCOPE OF THE HORK

The contract includes the furnishing of all paint and any other materials necessary to complete the work, also the labor necessary for the preparation for and the painting of the lines, as well as all tools and equipment, including traffic barricades and comes, necessary for the completion of the work to the satisfaction of the Director of Public Works.

The amount of painting to be done under the Proposal is 110,000 lin. ft., figured on a h<sup>n</sup> width basis. Actually the <u>Stop Lines</u> are to be painted 12" wider These have been converted to h<sup>n</sup> lines and added to the h<sup>n</sup> crosswalk and striping lines for bidding purposes only and the actual area to be painted would be the same.

All work shall conform to the State of Michigan Marual, "Uniform Traffic

Sample specification sheets for services, and a typical proposal by a supplier.



Buying Tomorrow's Product In Prototype Form Today

> Buying for a research outfit like Ramo-Wooldridge is one big small order problem. You rarely make a repeat buy: the product's already obsolete.

> > By T. A. Dickinson

Unique and costly components, such as this electronic tube, are among the items Ramo-Wooldridge must now procure in limited quantities.

DISCORD BETWEEN buying and engineering groups may well be regarded as a "necessary evil" in most companies. At Ramo-Wooldridge Corporation of Los Angeles it's just another tradition that's being disregarded.

"Engineering know-how was the only important asset our firm had when it was founded in 1953," explains genial F. M. (Fran) Brown, the corporation's manager of material and office services. "And it's primarily responsible for the company's rapid growth to sales that should total \$50,000,000 during 1957. Therefore, we find it easy to regard purchasing as a service which should help engineering effort in every possible way."

In view of its phenomenal growth, Ramo-Wooldridge is probably the No. 1 prodigy of the nation's mushrooming electronics industry. Yet at this writing, it has only one production setup—a pilot line which is turning out communications equipment. Engineering—essential to the development of guided missiles, computers, controls, electronic instrumentation, etc.—is and will probably remain the firm's most

important activity.

Nevertheless, Ramo-Wooldridge buyers issue 3559 purchase orders and spend approximately \$1,071,000 for 9185 different items in the course of an average month. Naturally, some of their expenditures are quite large; but the majority are relatively small. For example, not one of 200 blueprints recently released by R-W engineering necessitated the procurement of more than five identical parts!

Not only could issuing a routine purchase order cost more than many requisitioned items, but company buyers would be idling Production has to date been strictly a pilot-line proposition. However, the company will soon have a manufacturing division at Denver, Colo.

some very high-salaried technicians if they indulged in all the niceties of production buying. On the other hand, since Ramo-Wooldridge is a prime contractor for such governmental agencies as the U. S. Air Force, they must account for many of their expenditures more carefully than the average production purchasing organization.

### Decentralized Set-up

Therefore, Brown and his associates have created a decentralized materiel setup that places primary emphasis on the personal competence and integrity of the buyer.

In hiring buying personnel, they naturally consider past experience. But their policy is flexible to the extent that they will hire and train inexperienced men who appear to be outstandingly honest and intelligent.

Brown's concept of an ethical buyer, incidentally, may seem a bit extreme. For example, he insists that purchasing men refuse to accept such things as free lunches and inexpensive Christmas gifts from vendors.

"We pay better-than-average wages," he says, "plus expenses in many instances, to the men who measure up to our standards. And we are convinced that it's best for the individual as well as the company if our employees' conduct leaves no room for doubt as to their (or our) fairness."

Regarding buyers' qualifications, Brown adds: "We think intelligence is as important as past experience. It is just about impossible for any of our men to rely on precedents in purchasing limited quantities of the many new items our engineers are requisitioning at present."

All Ramo-Wooldridge buyers



have assistants who can handle such things as paperwork and expediting. But there is no real delegation of purchasing authority to anyone below the rank of buyer.

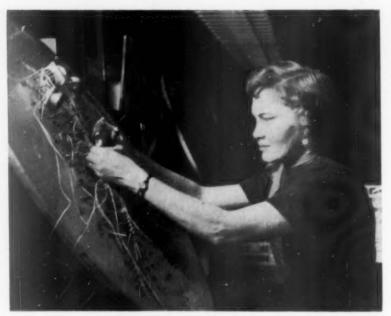
To keep down the number of items that must be purchased at premium prices, company buyers try to maintain an inventory of articles that are most likely to be needed by research and development personnel. These products are requisitioned by a committee of engineers and stockroom workers, and can be obtained without "red tape" by any technical man who needs them. No consistent effort is made to account for the disposition of the less expensive items, since this would necessitate bookkeeping expenditures which could easily exceed the value of the stock.

A pickup service, with six fulltime drivers, enables buyers to obtain—within 24 hours or less most standard products which can't be found in open stockrooms. These purchases are made with petty cash if they don't cost more than \$20, but they must be explained by procurement records the same as major transactions.

### Purchase Engineering

Because of differing schedules and activities, the cost of material service varies in each R-W division from month to month. However, current statistics indicate that it ordinarily amounts to less than a tenth of each dollar spent.

Purchase engineering is something Ramo-Wooldridge hasn't officially tried as yet, because it has



The phenomenal growth of Ramo-Wooldridge since 1953 is the result of their finding applications for electronic circuits, miniaturized by means of such things as transistors.

too frequently been necessary to buy products of maximum quality in a minimum period of time. However, buyers are encouraged to call engineering attention to better sources and products whenever possible.

As heretofore intimated, the company's policy in dealing with vendors is to be strictly fair and impartial. Since they have no suppliers who are also customers, reciprocity is no problem.

Where there is conflict between purchasing objectives and engineering demands, engineering usually gets the benefit of the doublt—for reasons already explained. However, engineering has no authority to buy and no procurement action can be completed until it has been documented or explained to the satisfaction of appropriate purchasing personnel.

In general, company buyers prefer subcontracts of the firm fixed-price type. However, they do make provisions for price redetermination when vendors obviously cannot be expected to estimate material or labor costs accurately. Purpose of this is to minimize the possibility that a reliable vendor will either make an

excessive estimate or else suffer a severe financial loss.

Also used are cost-plus-fixed-fee subcontracts, when it is impossible to locate vendors whose past experience will allow them to make accurate estimates. This type of subcontract should not be confused with the notorious (and now illegal) cost-plus covenants-of World War II, since it restricts a supplier to a profit which cannot be increased or reduced—no matter how low or high his actual costs may be.

### Contracts Can Be Modified

Both fixed-price and cost-plus subcontracts may be modified to:

(1) Establish a ceiling (based on a maximum cost estimate) beyond which the seller cannot go, except at his own risk, without prior approval. (Result of this might be described as a cost-plus contract with no fixed fee, although the terms naturally vary in accordance with the subcontractor's status as a commercial or non-profit institution).

(2) Provide an incentive by stating that the final price will not exceed a predetermined maximum amount. (This may involve either a fixed-price or a cost-plusfixed-fee arrangement).

In order to evaluate proprietary items which may or may not be of value to the company, Ramo-Wooldridge buyers sometimes purchase on approval—providing, or course, that the vendor is agreeable after being informed as to R-W intentions in each instance. Orders covering transactions of this type carry the notation, "On Approval-No Charge," and products subsequently delivered go through a more or less conventional receiving routine. Thereafter, the buyer who placed each order is responsible for any follow-up action that may be necessary to assure compliance with the terms of the trial agreement.

When it becomes obvious that the company should retain or return merchandise procured on approval, a change notice is issued. Purpose of this is to furnish information needed to correct all company and vendor records pertaining to the transaction.

Although the management of any R-W division can delegate responsibilities for inspecting and accepting or rejecting received items to a qualified non-buying group, it is always purchasing's job to contact vendors and make arrangements for any remedial action that may be indicated.

### **Buyers Just Buy**

Because Brown and his associates believe purchasing is most effective and efficient if it is handled by men with highly specialized duties and interests, Ramo-Wooldridge materel division has no official "sidelines" or functions which are not directly associated with and essential to procurement. For example, purchasing personnel cannot use the company's prestige and buying machinery to obtain "bargain merchandise" for themselves or fellow employees as a rule.

"There are of course certain unusual circumstances in which we might make exceptions to this or any other rule," Brown admits. "But in view of the current availability of virtually all types of consumer products in the Los Angeles area, we believe it would be neither fair nor advisable to put ourselves in the position of competing with established merchandising firms."



### Purchasing Sets the Pace In Standards

By H. W. Christensen, Director of Purchases, Columbia Geneva Steel Division, United States Steel Corporation

HERE IS an inherent logic of leadership by purchasing in the development and use of standards. This logic is based on:

1. Purchasing is a clearing house for all requisitions and for completing the purchase of all materials and services. Knowing the overall requirements of the company, it can take an objective view of cost reduction and serve the company interest without prejudice.

2. Purchasing is likewise the centralized point of contact with suppliers and markets. Information channeled into purchasing on materials, vendors' facilities, new products, price trends and other market information, is voluminous.

3. Expenditures for purchased goods, materials and services in most companies represent approximately 50 per cent of the sales dollar. From the purchasing perspective, every cost factor involved in a purchase can objectively be questioned and analyzed. This includes:

a. New sources of supply.

b. Prices in terms of cost-price relationship.

Long range supply-demand balances and forecasts.

d. General economic trends.

e. Vendors' facilities and capacities.

f. Quality control.

g. Substitution.

h. New methods and products.

i. Related costs to purchase, such as transportation, handling, packaging, and stock-

. . . and, of course, the regular use of standards.

### What Is Standardization?

Standardization is currently a very live and important subject. There is some wisdom in reviewing the various definitions as to what we mean by standards and standardization. Since there are almost as many concepts as there are actual printed standards, it may be well to state several standard definitions.

1. In the N.A.P.A. Standardization Manual, standardization is considered "The organized process of obtaining solutions to common problems," and standards are considered "The working records of such solutions; working to eliminate waste of creative effort in the repetitive consideration of identical problems". Thus, it can be said that standardization is the criterion established by common consent.

2. A widely used dictionary states that a standard is, "Anything taken as a basis of comparison; a model or a rule. That which is established by authority, custom, or general consent, as a model, example; criterion; test. In general, a definite level, degree, material, character, quality, or the like, viewed as that which is proper and adequate for a given purpose."

3. Standardization might also be defined as a common language between buyer, seller and user.

### Benefits of Standardization for P. A.'s

The purchasing interest in standardization differs from that of most industry groups in two important ways.

Technical aspects and specific applications so important, and sometimes controversial, in other fields, are of secondary interest in purchasing.

Purchasing men have been won over to standardization entirely on the basis of results. Purchasing cannot help being receptive

Abstract of speech before Eighth National Conference on Standards, American Standards Association held in San Francisco, California, November 14, 1957.

to standards that result in such benefits as the following:

- Opens up multiple sources of supply where only one existed before.
- Provides a clear and equitable basis for competitive bidding—thus broadens competition, and promotes fairness because comparisons can be easily made.
- 3. Reduces inventory investment, accelerates turnover, and curbs the risk of losses from obsolescence and duplications, while still maintaining the required safe margins of stock supply. Eliminates types, grades and sizes and thus enables the purchaser to operate on smaller inventories at less cost, to buy in more economical quantities, and to improve deliveries through greater availability. Inventory is a very important item with every company. Large amounts of working capital can be tied up in inventories, and costly handling and acquisition costs can accrue from excessive inventories and/or frequent and excessive small value purchases.
- Reduces the cost of maintenance and repair, because fewer parts and supplies have to be carried in stock. Methods are simplified in usage of standard parts.
- Standards lower unit costs by making mass production possible. This makes quantity discounts possible, improves long range material planning requirements, and reduces rejections and obsolescence.
- Quality control programs and safety records improve.

The second point of difference is that purchasing men have to do a selling job, and since purchasing buys to satisfy requirements that are originated in technical and operating departments, their recommendation is most unbiased and is based on group agreement and action. Suggestions and recommendations are offered purely for the cost reduction benefits to be gained on behalf of standards.

To sum up — The benefits

The application of standards. and principles of standardization, are a prominent part of our Value Analysis Program. e.g. standardization of acetylene cutting tips to a single standard specification in lieu of numerous brand names, has resulted in a saving of approximately \$8,000 per year. In another instance, one of our buyers standardized on minimum factory runs for 3, 8, 10 and 16 conductor cable in lieu of small variable quantities. Result-savings of \$28,008 annually.

achieve the primary purchasing objective of obtaining greater value—through lower costs.

### **Applying Standardization**

It is frequently necessary to carry out our prerogatives of recommendation. We advise:

- 1. When it is favorable to increase or decrease a quantity.
- When to change to standard packaging for lower shipping and handling costs.
- Why a change in specification, brand or product to a standard, will reduce costs and provide other benefits.
- When an increase in inventory is desirable in view of detrimental price trends, or because of decreasing availability.
- 5. In the case of certain raw materials sensitive to the law of supply and demand, it is essential that inventories be closely controlled in accordance with market con-

In addition to the above advisory contributions, a time-consuming and costly problem has been to determine what a requisitioner really requires. This problem is due to the requisitioner specifying obsolete or incorrect nomenclature, poor or incomplete specifications, and incorrect manufacturers' reference data. Although this information, when developed by purchasing, was passed back to operators and storekeepers, there were too many instances when it was not

recorded for subsequent reordering purposes.

This problem, we believe, is common to many operations and purchasing activities in all industries. It is being resolved in our division by the work being done in a commodity classification and standardization program.

This program encompasses the unification of inventory and purchasing activities and the establishment of control in maintaining standards for stores items and single multiple purpose spares. It had its impetus from another activity which we know as automation.

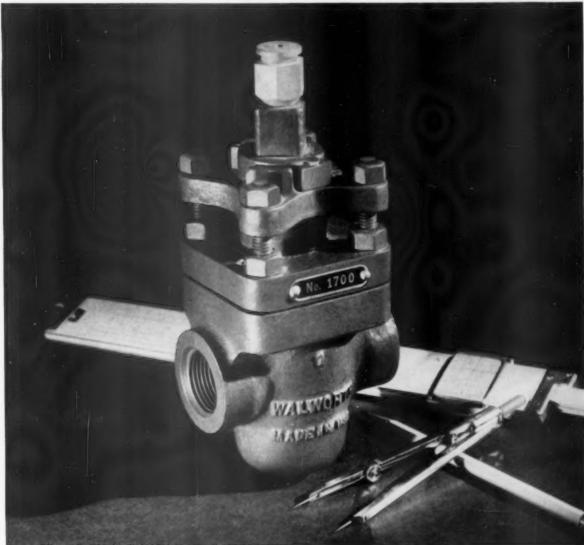
In the sense that automation is applied to clerical and office management activities, the program originally conceived and introduced by the Methods Division, Accounting Department of United States Steel Corporation, is known as integrated data processing. It has the following objectives:

- Original data is recorded at its point of origin in a mechanical form.
- Once in mechanical form, the data is processed exclusively in a mechanical manner.
- All processing of data is integrated so that original data in mechanical form, serves all subsequent applications.

One of the applications is in purchasing. The preparation of purchase orders by a mechanical medium (the Programatic Flexowriter) is the point of origin of selected purchase data which can be perpetuated through the common language medium, which is the five-channel Flexowriter tape. The tape is used for subsequent application in accounting operations and inventory control. It is also used for the preparation of inventory statistics and purchasing control reports, essential for proper management decisions. These reports can be easily obtained automatically as a byproduct of the purchase order writing system. They include:

- a. Purchase statistics by item and commodity.
- Purchase statistics by vendor and commodity.
- c. Expediting reports.

(Please turn to page 314)



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For More Information Circle No. 214 on Inquiry Card-Page 17

### Requirements of a Surety Contract

The law is not always clear as to when a guarantee or surety contract is valid and enforceable. These specially selected case studies will help you determine your position.

By Leo T. Parker

DURING THE recent past, some finance companies were not satisfied to handle the paper of sellers who sell merchandise on the monthly payment plan, without a substantial guarantee against financial losses signed by one or more responsible persons in the selling corporation or organization. As this situation has not been prevalent during the past, the law on this subject is somewhat uncertain as to when and under what circumstances such a guarantee or surety contract is valid and enforceable.

### No Valid Consideration

A few weeks ago a higher court rendered an important decision which explains the present day law on this subject and establishes new law which undoubtedly other courts will follow in the future.

In Universal C.I.T. Credit Corporation v. De Lisle, 287 Pac. (2d)

302, the testimony showed facts, as follows: A long time ago the Eagle Company, which sold Nash automobiles on the installment basis plan, and the Universal C. I. T. Credit Corporation signed a contract by the terms of which the C.I.T. agreed to pay cash for automobiles at the Nash factory and place them on the Eagle Company's floor. As is usual under such finance contracts, when Eagle sold the cars, it paid C.I.T. off. Also, under this contract, when the Eagle Company sold an automobile on credit it would sell the contract to C.I.T. for cash. C.I.T. would carry the contract and collect monthly payments from the buyer of the car.

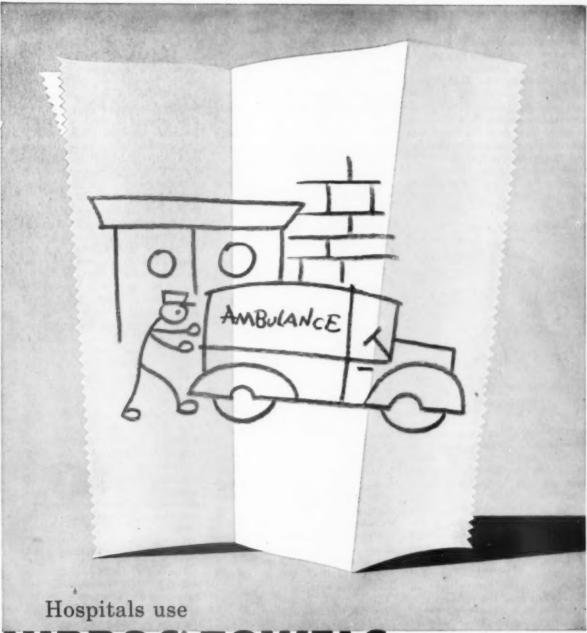
Further testimony showed that a man named Lisle was president of the Eagle Company. In order to satisfy C.I.T., Lisle and his brother signed a contract in which they guaranteed to be responsible to the C.I.T. for any and all debts which "at present and in the future" the Eagle Company might owe the C.I.T. This was done in order to induce the C.I.T. to continue to finance Eagle deals. In other words, it appeared that the C.I.T. might not otherwise continue to finance the various deals to be made in the future by the Eagle Company with its installment payment buyers of automobiles.

In this contract Lisle and his brother clearly requested the C.I.T. to make further advances to the Eagle Company under the usual wholesale floor plan arrangements and otherwise "purchase notes, conditional sale contracts, chattel mortgages, bailment leases or other obligations; generally termed 'paper', from or otherwise to do business with or to renew or to extend any obligation of" the Eagle Company. The contract further stated "and in consideration thereof" and of benefits to accrue to Lisle and his brother, each of them, jointly and severally and unconditionally guaranteed to pay to C.I.T. "all present or future obligations" assumed by the Eagle Company in the operations of selling Nash automobiles to installment payment purchasers.

It is important to observe that this contract did not state that Lisle and his brother were signing the contract in order to induce the C.I.T. to "extend additional" credit to the Eagle company. This contract merely was



WHEN SUBCONTRACTOR RELIES ON THE OWNER FOR PAYMENT THE LATTER ASSUMES GENERAL CONTRACTOR'S LIABILITY



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made in order to secure the C.I.T. against future financial losses if it continued to finance deals made by the Eagle Company.

Subsequently, the Eagle Company became financially involved, resulting in a loss to C.I.T. of several thousand dollars. This loss resulted from poor deals and sale contracts financed by the C.I.T. for the Eagle Company. The C.I.T. sued Lisle and his brother to recover this amount. The higher court refused to hold the C.I.T.

if the contract had stated that Lisle and his brother were signing the guarantee contract in pendent consideration for the new

order to get further or additional credit from C.I.T. In this respect the higher court explained that when new parties assume obligations with respect to a contract after its execution and delivery, and a new transaction is engrafted on the original one, conferring additional rights on the obligee, there must be an inde-

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A THIRD PARTY'S GUARANTEE OF PAYMENT IS NOT ENFORCEABLE UNLESS IT IS IN WRITING

entitled to a recovery of this money, holding that there was no valid consideration on which the above mentioned guarantee contract was based. The court

"There is nothing in the record to show that C.I.T., when it entered into the contract, relied upon an existing offer or promise of Lisle, made either to Eagle Company, or to C.I.T., to bind himself at some future date. In the instant case the testimony is that appellant (Universal C.I.T. Credit Corporation) in order to continue the account, secured the guaranty from respondent (Lisle). There is not one word of testimony that respondent (Lisle) executed the guaranty in order that further credit be extended to the motor company. There is nothing in the written guaranty itself to indicate that it was given in consideration of the extension of further credit. Appellant (Universal C.I.T. Credit Corporation) has failed to prove that the guaranty was supported by an independent consideration.'

Apparently the guarantee would have been valid and enforceable undertaking. However, a guaranty contract executed after the creation of the principal obligation is supported by a consideration (and is valid and enforceable) if it is predicated upon an antecedent promise with respect thereto, made as an inducement to the principal obligation, either directly by the undertaker or by the principal obligor in such a way as to bind him in a legal duty to the obligee.

This court further explained that rules of "consideration" applicable in controversies involving contracts, generally, apply in construing the effect of surety and guaranty arrangements. In other words, a benefit to the principal debtor or to the guarantor on the one hand, or some detriment to the guarantee on the other, is sufficient consideration for a contract of guaranty. And the extension of further credit is also considered a sufficient consideration for a promise to pay both the existing and future debts of the principal.

### Law Of Surety Contracts

A surety contract is void, first, if there is no valid consideration,

and, second, if it is not in writing.

For example, a responsible person may make a definite oral agreement, before many witnesses, to be responsible for debts incurred by a specified person, firm or corporation, but such contract always is void and unenforceable. On the other hand, if the guarantor makes a positive oral contract to "himself" pay for merchandise purchased by named person, firm or corporation, this contract generally is held by the courts to be valid. In this instance the guarantor clearly guarantees to pay the bill without regard to whether or not the purchaser will pay for merchandise he may purchase. In one instance the guarantor guarantees to pay the purchaser's bill, if the purchaser fails to pay it, but in the other instance the guarantor authorizes the seller to charge to him all merchandise purchased by the purchaser. Very often there is a fine line of distinction between these two kinds of obligations.

For example, in the leading case of Wallice v. Acrow, 192 N. E. (2d) 182, the testimony showed that a man said to a seller, "You can sell Mr. Ahrens merchandise and know that you will get your money because Ahrens is good pay. In fact I will pay you every cent he may owe you in the future".

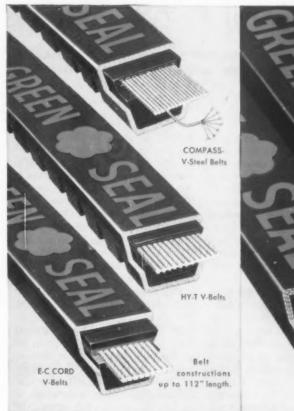
### Must Be in Writing

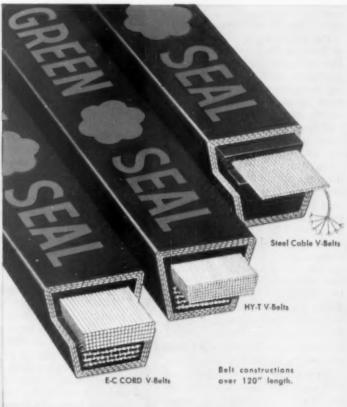
The higher court held this oral promise valid because it was definitely not a surety contract.

For comparison, see the leading case of White v. Astor, 25 N. W. (2d) 757. In this case it was shown that a man named White said to a seller named Astor, "I recommend that you sell Reeves all the merchandise he wants. He is good pay. You can depend upon me to compel Reeves to pay you."

In subsequent litigation, the higher court held that this was an oral surety contract, and therefore void, because White did not promise to pay for the goods but merely stated that he would "compel" the buyer to pay for the merchandise. In other words, by making this statement White Do you know the inside story of.

### V-Belts with Green Seq!?





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merely was guaranteeing that Reeves would pay for the merchandise.

A reader asked this question: "If an employer orally guarantees to a creditor that debts accumulated by his employee will be paid, is such a contract enforceable?"

The answer is no, unless the employer clearly promises to personally pay these debts.

For example, in the new case of Eilert v. Weber, 255 Pac. (2d) 150, the testimony proved that a purchaser, named Eilert, of building materials was given a subcontract by a general contractor to install certain equipment in a building. The total amount due Eilert from the general contractor for labor and materials on the completion of the work was to be the sum of \$8,857.17. During the progress of the work Eilert was paid \$3,000 by the general contractor and \$1,500 by the property owner. Eilert completed his work, and, having been paid nothing more, instituted suit against the property owner for the balance which he claimed to be \$4,357.17. In other words, Eilert sued the building owner to recover the balance due on his contract made with the general contractor, and on which the general contractor was liable.

During the trial Eilert proved that while the work was in progress the general contractor failed to pay him moneys due, and he refused to proceed further. Later, however, he continued the work only because the building owner had orally promised to pay him for the work then completed and for the work to be completed. This promise was made by the building owner to induce Eilert to finish the job.

The building owner argued that such a verbal or oral promise is void because such a surety contract to be valid must be in writing.

The higher court ordered the building owner to pay Eilert the full amount, \$4,357.17, due from the general contractor and said:

"It is apparent to us from the evidence hereinbefore set out that the plaintiff (Eilert) was no



MANUFACTURER, DISTRIBUTOR AND OPERATOR ARE ALL LIABLE IN BREACH OF AN IMPLIED WARRANTY OF FITNESS

longer willing to look to the general contractor for payment, and each of the parties understood that the plaintiff was not relying upon the general contractor to pay for the work done subsequent to the promise of the defendant (building owner) but was looking to the building owner primarily for payment for the materials and labor furnished subsequent thereto."

For comparison see Mackey v. Smith, 28 P. 974. This court said:

"The rule is that where the purpose of a person who agrees to pay the debt of another is to gain some advantage or promote some interest or purpose of his own, and not to become a mere guarantor or surety for another's debt, it will be valid although not in writing."

### Surety With Consideration

On the other hand, a surety is liable on an oral promise to pay another's debt, if the court may imply that in making the promise the guarantor undertook to make the payment irrespective of whether or not the principal debtor intended to pay the amount he owed. Hence, if the guarantor assumes the obligation to pay, there is no surety contract but a positive obligation. These rules of law are applicable to all contracts, whether for purchase of merchandise or otherwise.

Notwithstanding these various explanations, the law now is clearly established that a contract is not valid and enforceable if it is signed by a responsible person merely to cause or induce a financial institution to "continue" in the future to finance deals, installment contracts, etc. that it has generally in the past financed. This is so because there is no valid consideration. Of course, this same law is applicable to all other contracts signed by a guarantor to induce a creditor to continue extending credit to a named buyer.

For comparison, see Cowles Publishing Company v. McMann, 172 Pac. (2d) 235, 238, 167 A. L.R. 1164. This court recognized the exception that a contract of guaranty, although executed at a time subsequent to the creation of the principal obligation, is founded upon a consideration, if its execution is the result of previous arrangement, the principal obligation having been included by or created on the faith of the guaranty. With reference to that rule, the court said:

"A review of the cases makes it apparent that the rule has been limited in its application to situations where at the time the principal obligation is entered into: (1) the guarantor has offered or promised the debtor to guarantee the debt for him and the debtor communicates this information to the creditor who executes the principal contract in reliance thereon, (2) or the guarantor makes such promise direct to the creditor with the same result, (3) or the debtor gives the creditor an assurance that if he later deems the debt insecure he might look to a certain person, then

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named by the debtor, to guarantee the debt."

Also, see Johnson and Anderson, 299 N. W. 343. This higher court upheld the law:

"A consideration to support a promise, not in writing, to pay the debt of another must operate to the advantage of the promisor, and place him under a pecuniary obligation to the promisee independent of the original debt, which obligation is to be discharged by the payment of that debt."

For further comparison, see Artic v. Schmall, 57 N. W. (2d) 287. Here a man named Schmall desired one Artic to supply him with certain merchandise and perform specified work. Originally Schmall had contracted with one Will to perform the complete service for which Schmall was to pay Will, who was to pay Artic. The latter became dissatisfied and then Schmall said: "You don't have to worry. I'll see that you get your money." In other words, Schmall verbally guaranteed that the subcontractor would be paid his full contract price by Will. When Will refused payment, Artic sued Schmall. In holding Schmall not liable, the higher court said:

"Any promise by a third person (Schmall) to pay the debt must be in writing, otherwise it is void by operation of the provisions of the statute of frauds."

In this case the testimony and evidence proved that when Schmall said to Artic, "I will see that you get your money," this was not a definite promise to pay

Artic, but its meaning was to the effect that "if Will does not pay you, I will pay you". Hence, it was a surety contract, void unless in writing.

### Who Is Liable?

A legal question in the minds of many purchasers is: "If a retail dealer sells merchandise which he purchased from a manufacturer or wholesaler and the purchaser sustains an injury resulting in use of the merchandise, who is liable in damages?"

The higher courts have rendered an unusually large number of decisions on suits against sellers filed by purchasers who sustained injuries or illness resulting from use of the purchased merchandise.

Generally speaking, the manufacturer, wholesaler and retailer may be jointly liable. However, sometimes the retailer is solely liable if the merchandise, which caused the injury or illness, was not in a sealed package and the retailer had the opportunity to inspect the merchandise and failed to use reasonable care and diligence to discover the defect or dangerous condition and eliminate it. A few weeks ago a higher court so held.

For illustration, in Vogel v. Thrifty Drug Company, 259 Pac. (2d) 450, the testimony showed facts that a customer purchased from a retail druggist certain edible merchandise which was in an unsealed container. When eating the product she broke her dental plate, felt a cutting sensation, spit the contents of her

mouth out into a napkin and found that it contained small pieces of glass. She claimed that she sustained complicated injuries and sued the retail dealer for heavy damages.

The higher court indicated that the retail druggist would be liable in damages to the customer if the testimony proved that her injuries resulted from negligence of the druggist, or that she relied on his statements that the product would be satisfactory.

Recently a higher court held that where a retail dealer sells articles for immediate human use, the purchaser may rely upon an "implied" warranty that such merchandise is not deleterious, and in the event he sustains injuries he may sue for damages upon such implied warranty.

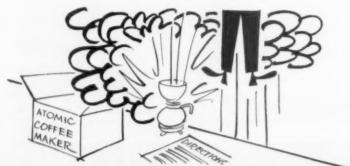
This court also explained that where merchandise for human use is manufactured or packed by a manufacturer, and a retail dealer sells it to the consumer, the manufacturer, the intermediate dealer, and the retail seller impliedly warrant that such merchandise is fit for immediate human use. In other words, the manufacturer, wholesaler and retailer all are liable in damages to the purchaser consumer who suffers injuries.

See Graham v. Botten, 269 Pac. (2d) 413. The testimony showed facts, as follows: One Graham filed suit to recover damages for injuries allegedly sustained from the use of a hair preparation. Graham proved that the hair preparation was sold by the manufacturer to a distributor who sold it to the operator of a beauty shop. This higher court said:

"It is clear that appellee's (Graham's) cause of action is predicated upon the breach of an implied warranty on the part of the manufacturer, the distributor, and, for that matter, the owner of the beauty shop."

This court held that the suit against the distributor for damage for breach of an implied warranty that the hair preparation, which the distributor sold to the beauty shop operator, who used the preparation on Graham's hair, was fit for the purpose for which it was sold, stated a cause of

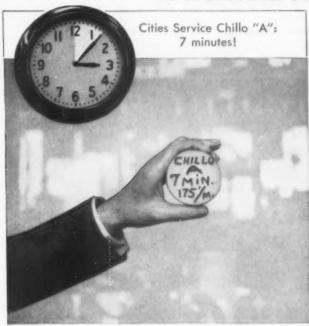
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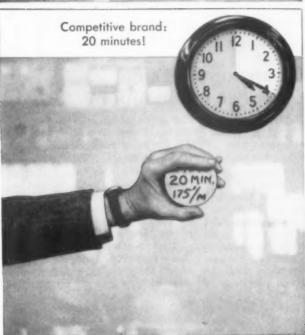


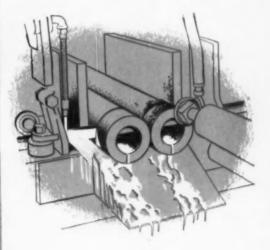
RETAILER IS LIABLE IN SALE OF UNMERCHANTABLE QUALITY GOODS, EVEN IN MAKER'S SEALED CARTONS

### **Cutting Oil takes the time test**

at S. G. Frantz Co., Inc., Trenton, N. J.







S. G. Frantz Company decided to keep a truly open mind.

They'd been using Cities Service Chillo Cutting Oil and other Cities Service products for some time with great satisfaction. Still, there was no harm testing Chillo Cutting Oil against another brand just to make sure they were getting maximum results.

But even the people at S. G. Frantz never expected what followed. Using the competitive oil, and a piece of 4130 aircraft rod, 23/8" in diameter, they made a single cut at saw speed of 175 feet per minute. Time: 20 minutes.

Next, the same test again — but this time with Cities Service Chillo "A" Cutting Oil. Time: 7 minutes! Nearly three times faster!

Using the same material on another job, the Frantz Company found difficulty making clean threads to aircraft standards on a Number 5 Turret Lathe—that is, until Cities Service Chillo 10Z was tried. Right there the problem ended.

"The problem ended." You'll hear it again and again from those who use Cities Service Cutting Oils and lubricants. And perhaps these oils can end a problem for you, too. Talk with a Cities Service Representative. Or write: Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

CITIES ( SERVICE

QUALITY PETROLEUM PRODUCTS.
For More Information Circle No. 218 on Inquiry Card—Page 17



• Here's important, money-saving news for all users of steel wire and wire products! From ACCO's Page Steel and Wire Division has come a great new wire—ACCO ALUMINIZED—which is the successful culmination of years of research and development of a wire providing the strength and other desirable properties of steel plus the high corrosion resistance of aluminum.



By a new hot-dip process, covered by U.S. and foreign patents, a coating of commercially pure aluminum is bonded to the iron or steel wire. This coating provides long-lasting protection against corrosion in exposure to normal atmospheric conditions.

### **Outlasts Galvanized Wire**

Salt spray tests conducted in accordance with ASTM procedures show that, for equal thickness of coating, aluminized wire outlasts galvanized wire by more than 2 to 1.

Aluminum's unique properties establish its proved superiority, as a coating, over the zinc used in ordinary galvanizing. ACCO ALUMINIZED Wire offers a high degree of ductility and adherence of the aluminum coating.

With all the many advantages of ACCO ALUMINIZED Wire, its price is comparable and competitive with that of wire with galvanizing of equal thickness. Actually, it saves you money by making your wire dollar go farther. And—it is made and backed by an organization of broadest skill and experience in the

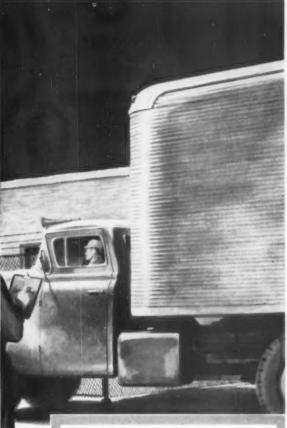
art of wire-making for widely diversified uses.

### Many Potential Uses

Our Page Steel and Wire Division is already producing the following items, among others—Strand for Guy Wire, Ground Wire, and Messenger Wire purposes; ACSR Core Wire; Telephone Wire; Chain Link Fence; Barbed Wire.

Expansion into other fields of uses is anticipated for those applications where the strength of steel complemented by a protective coating of aluminum is expedient, including high temperature applications. A cooperative development program is at your service.

Our new Folder DH537-A contains a wealth of interesting information on ACCO ALUMINIZED Wire—its unique properties, its many practical and economical uses, etc. Write for a copy today.



### AGE ALUMINIZED CHAIN LINK FENCE

When you safeguard your property-industrial, institutional or residential-with the new Page ALUMINIZED Chain Link Fence you get better, longer-lasting protection at a substantial long-range saving! This remarkable new fence fabric has all the strength of steel plus the weathering resistance of its protective coating of aluminum. Yet, with all its obvious advantages, Page ALUMINIZED Chain Link Fence costs no more to buy and install than galvanized fence!

### Why Acco products mean better values

Our research, designing and manufacturing facilities are devoted to making Acco products "intentionally better" in on-job performance. Year after year, reorders from our customers attest Acco's Better Values.

### Below is a list of major Acco products and Acco Divisions

#### ABRASIVE CUTTING WHEELS

Rubber and Resinoid Ronded

ALUSON DIVISION

**BOLTS and NUTS** - Lag Screws and Forgings THE MARYLAND BOLT and NUT COMPANY

Electric Furnace Steel and Iron . Malleable Castings

ACCO STEEL CASTING DIVISION ACCO MALLEABLE CASTING DIVISION

Weed Tire Chains . Acco Registered Sling Chains Welded and Weldless Chain and Attachments AMERICAN CHAIN DIVISION

#### CUT-OFF MACHINES

Abrasive Cut-Off Machines . Nibbling Machines CAMPBELL MACHINE DIVISION

#### CONTROLS

Tru-Lay Push-Pull Controls • Brake Controls Aircraft Cable • Tru-Stop Brakes for Trucks and Buses AUTOMOTIVE and AIRCRAFT DIVISION

GAGES - Pressure, Vacuum and Compound HELICOID GAGE DIVISION

HARDNESS TESTERS - "Rockwell" and TUKON WILSON MECHANICAL INSTRUMENT DIVISION

#### HOISTS and CRANES

Wright Chain Hoists . Electric Hoists . Cranes WRIGHT HOIST DIVISION

Ford Chain Hoists . Electric Hoists . Trolleys FORD CHAIN BLOCK DIVISION

#### INSTRUMENTS

Automatic Control, Recording, Indicating and Telemetering Instruments • Socket Screws THE BRISTOL COMPANY

#### LAWN MOWERS

Rotary and Reel-type Power Mowers . Hand Mowers PENNSYLVANIA LAWN MOWER DIVISION

**VALVES** . Bronze, Electric Furnace Iron and Cast Steel R-PAC VALVE DIVISION

#### WIRE, FENCE, WELDING WIRE

Manufacturers Wire . Shaped Wire Chain Link Fence . Welding Wire

### PAGE STEEL and WIRE DIVISION

Tru-Lay VHS Preformed Wire Rope . Tru-Loc Assemblies Acco Registered Wire Rope Slings

AMERICAN CABLE DIVISION

Lay-Set VHS Preformed Wire Rope . Tru-Loc Assemblies Acco Registered Wire Rope Slings HAZARD WIRE ROPE DIVISION

IN CANADA: DOMINION CHAIN COMPANY, LIMITED Niagara falls, Ontario

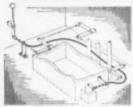
THE BRISTOL COMPANY OF CANADA LIMITED Toronto, Ontario

IN ENGLAND: BRITISH WIRE PRODUCTS, LIMITED THE PARSONS CHAIN COMPANY, LIMITED

For Information on any ACCO product,

address Market Development Department, American Chain & Cable Company, Inc., 929 Connecticut Avenue, Bridgeport, Connecticut

### BELOW ARE ILLUSTRATED A FEW OF THE MANY OTHER ACCO PRODUCTS



#### TRU-LAY PUSH-PULLS

...simplify design and improve construction by eliminating links and levers. Solid as a rod, yet flexible as wire



#### PENNSYLVANIA LAWN MOWERS

The PENNSYLVANIA line famous for performance since 1877-includes efficient power mowers and easy-running. smooth-cutting hand mowers.



#### CAMPBELL ABRASIVE CUTTERS

A complete line of highest quality machines for dry, wet or submerged abrasive cut-off. Machine capacities to solid squares.



#### ACCOLOY X-WELD 125 CHAIN

identifies itself by its "kingnize" welding areas, which provide unequalled strength at the welds. Non-kinking; always hangs straight.



### American Chain & Cable Company, Inc.

SALES OFFICES IN: Atlanta, Bridgeport, Conn., Boston, Chicago, Denver, Detroit, Exeter, Pa., Houston, Los Angeles, Monessen, Pa., New York, Philadelphia, Pittsburgh, Portland, Ore., Reading, Pa., San Francisco, Wichita, Kans., Wilkes-Barre, Pa., York, Pa.



you can use

### "Split" Automation Using Magnetic Tape

Machine operators are being displaced by magnetic tape in the aircraft industry. Giddings and Lewis Machine Tool Co. says its magnetic tape controlled milling machines are now being used in production. The "robot" machines are milling contour surfaces on components for jet planes and missiles.

Here's how the magnetic tape system works:

1. Key contour coordinates are traced directly off blueprints and coded on punched cards or punched tape.

 These punched cards are then fed into a computer. The computer is programmed to calculate intermediate coordinates and to code them on additional punched cards.

3. The complete deck of cards then goes into an interpolator where the data on them is transferred on to a single magnetic tage.

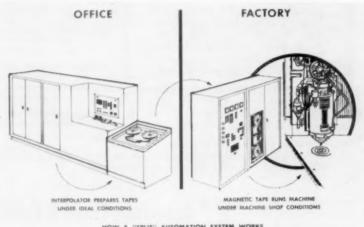
4. The tape, in turn, is used to direct the actual machining operation. A single roll of tape 14 inches in diameter (a one-inch tape, 7200 feet long) can control the machine for one and one-half bours.

The major advantage of the Giddings and Lewis system is that it permits operations 1, 2 and 3 above to be done away from the machining area. With this so-

called "split" system, interpolating and the preceding operations can be done in an office atmosphere. There the greater cleanliness, and superior temperature and humidity control greatly improve the accuracy and reliability of the programming.

With systems that translate instructions on punched cards directly to machine operations, the interpolator and all the cards must be located in the machining area. Mislaid and dirty cards aren't the only disadvantage of

such a set-up. Even more important is the fact that a costly interpolator can't be used at peak efficiency. Reason for this is simple. If the interpolator is tied in directly with the machine tool, there obviously must be one interpolator for each machine. But this isn't necessary. The interpolator can translate data from punched cards to tape at rate many times that at which the machine tool uses the tape. In fact, one interpolator can serve dozens of machine tools.



HOW A "SPLIT" AUTOMATION SYSTEM WORKS
USING MAGNETIC TAPE

Fig 1-How a "split" automation system works using magnetic tape.



NOW:

C/R

Industrial

O-Rings

in Standard Sizes and Compounds

Through the years Chicago Rawhide has developed a reputation for designing and compounding special O-rings to solve special sealing problems. Now, C/R offers O-rings in a full range of standard industrial sizes and compounds, and assures you of the superior quality, service and dependability that have made Chicago Rawhide the leader in fluid sealing.

### Write today for your free copy of the new C/R O-Ring Bulletin.

It lists standard O-rings keyed to the new, uniform dash numbering system in accordance with SAE Aeronautical Recommended Practice 568 as well as the 6227, 6230 and 6290 series sizes. It also lists C/R compounds formulated for a broad range of industrial purposes with hardness ratings, compatibility, temperature ranges, and typical O-ring installation details.

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PRODUCT
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### CHICAGO RAWHIDE MANUFACTURING COMPANY

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Offices in 55 principal cities. See your telephone book

OTHER C/R PRODUCTS: C/R Shaft and End Face Seals \* Sirvene (synthetic rubber) molded pliable parts \* Sirvis-Conpor mechanical leather cups, packings, boots \* C/R Non-Metallic Gears



# new products and cost-saving ideas

### New Look in Circuit Breaker Design

Most sweeping design advances in 13 years. That's what I-T-E Circuit Breaker Co., Philadelphia, Pa., says about its new Kline of low voltage power circuit breakers-600-volt units in 225, 600, and 1600 ampere frame sizes.

Major advances include:

· Quick-make manual closurea feature that can greatly prolong the life of contacts and even of the breaker itself. A spring-action mechanism provides the manual quick-make action, eliminating damaging arcing that results from slow, careless closure by hand. Quick-make closure was formerly

available only on electrically-operated breakers.

· Greatly reduced size and weight-a design and installation advantage for switchboard assemblers, and a convenience in servicing for equipment users.

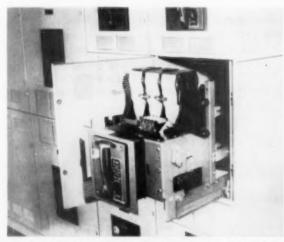
· Sub-assembly construction. Six sub-assemblies take the place of the 130 separate major parts in previous models. A part replacement that formerly required an all-day overhaul of the breaker may now be only a one-hour job of removing and replacing a unit sub-assembly.

• Interchangeable overcurrent

trips-now readily replaceable, through use of sub-assembly construction. This facilitates planned increases in load capacity.

• Automatic trip indicator. An escutcheon - mounted, automatic trip indicator shows that the breaker has tripped on overcurrent or undervoltage.

The new K-line breakers are designed for commercial building, industrial plant and power station applications - for the switching, control and protection of motors, generators, transformers, feeder circuits and other large electrically-power equipment.



I-T-E's new line of low voltage power circuit breakers offer improved performance, simplified operation and servicing. This is the result of major design advances.



Operation of the pull-down handle stores energy in springs. With the handle in the bottom position, spring energy is released to close contacts.

Circle No. 37 on Inquiry Card-Page 17

## "WHEN I NEED PIPE I Call L. B. FOSTER CO."



### ... and a Foster truckload will be on the way immediately. Or a carload...or any quantity."

Yes...regardless of how much pipe you need...or what kind of special pipe, or unusually-large size...it's a good bet you'll find most of the items in Foster warehouse stocks. And it's also a sure bet you'll get immediate and dependable service. For service is a specialty at L. B. Foster Company...especially on the hard-to-get items.

When you need pipe—seamless, seamless carbon pressure pipe, seamless alloy, prime tested and structural—in all sizes, ½" thru 36"—and now aluminum and PVC pipe, valves, fittings. Try us today . . . wire or call any of the six Foster offices collect.



PIPE · RAILS · STEEL-SHEET PILING · PIPE PILES · H-BEARING PILE · VALVES & FITTINGS

ILB INOSTAR CO.

PITTSBURGH · NEW YORK · ATLANTA · CHICAGO · HOUSTON · LOS ANGELES

For More Information Circle No. 221 on Inquiry Card-Page 17



STOP
DOWN TIME
for belt take-up
with stretch-free
EXTREMULTUS

EXTREMULTUS power transmission belting is not just "relatively" free of stretch.

EXTREMULTUS has operated for 10 years on fixed centers without adjustment. EXTREMULTUS combines a thin elastic core of superior polymer with an unexcelled friction surface of specially chrome tanned leather. The result is service without maintenance at speeds over 10,000 feet per minute, on loads up to 6,000 horsepower, at bearing loads and belt widths a fraction of those re-

EXTREMULTUS, INC.

quired by other belts. Write today for full infor-

mation and descriptive catalog.

405 LEXINGTON AVE., NEW YORK, N.Y.
For More Information Circle No. 222
on Inquiry Card—Page 17



Beam Switching Tubes With High Impedance



Magnetron beam switching tubes, being placed on the market by Burroughs Corp., Electronic Tube Div., Plainfield, N.J., are said to be the only device with high input impedance and ten individual constant current outputs. They can perform the functions of 20 or more tubes or transistors. They are compatible with tubes, transistors, cores, thyratrons, relays, nixie numerical indicators and other devices. This high vacuum electronic distributor has an estimated life of 50,000 hours. Applications of the tube for frequency dividing, timing, and multi-position distributing are limitless.

Circle No. 38 on Inquiry Card-Page 17

### Saw Blades for Cutting Stainless Steel



The development of a saw blade, capable of satisfactory cutting performance in stainless steel,

is announced by the H. T. Keesling Corp., P.O. Box 30, Hayward, Calif. It can be used on portable high-speed reciprocating saws. In addition to stainless, the blade can be utilized to make limited cuts in materials up to a hardness of 55 Rockwell on the C-scale. The blades are available in the "bayonet" design, found best for contour work, in five sizes, with teeth per inch specification of 10, 14, 18, 24 and 32 and usable cutting length of 15%".

Circle No. 39 on Inquiry Card-Page 17

### All-Purpose Filler Rod

A low-fuming, manganese bronze filler rod, trade named Ampco-Braz #2, is being produced by Ampco Metal, Inc., 1745 S. 38th St. Milwaukee 46, Wis., for maximum usability. It is said to find exceptional service in brazing and braze-welding steel, cast iron, malleable iron, copper and copper-base alloys, in addition to overlaying bearings and other wear. It provides smooth, dense, free-flowing deposits with excellent tinning action, producing relative high strength joints up to 60,000 psi. Overlay deposit hardness is 80-110 BHN (500 kg.) Circle No. 40 on Inquiry Card-Page 17

### **Heavy Duty Bronze Valves**



Hammond Brass Works, Hammond, Indiana, bronze valve manufacturer, announces a new line of bronze heavy duty valves for commercial, industrial and original equipment applications. The line includes gate valves up to 200 psi working steam pressure, globe valves up to 300 psi working pressure, and swing checks up to 150 psi working steam pressure. Each heavy duty valve is fully tested, meets government specifications, and is provided with an identification disc.

Circle No. 41 on Inquiry Card-Page 17

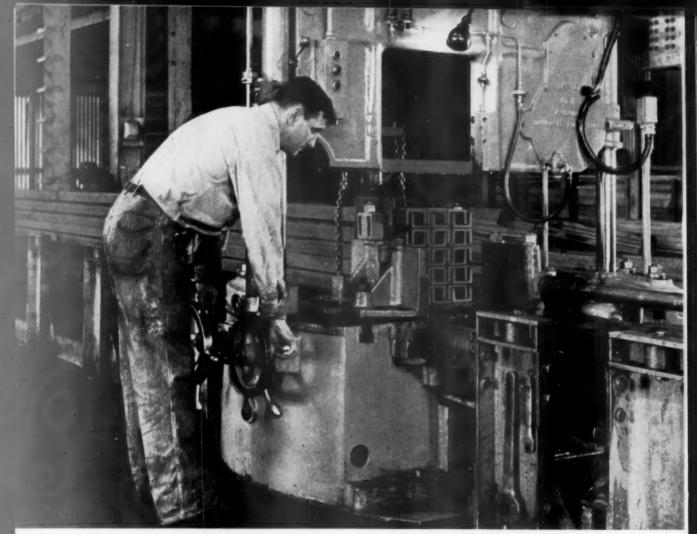
# ONE STEP ACROSS the NATION

non-stop 2-man sleeper cab service coast-to-coast one carrier responsibility cuts 20% off running time

II/C

DENVER CHICAGO TRUCKING CO., INC

THE ONLY COAST-TO-COAST CARRIER



Special services, such as cutting channels to length, are offered by distributors of Bethlehem products.

## Distributor Makes the Tough Plays Look Easy

That's probably the way a sports writer would say it. And Henry H. Lawyer, purchasing agent for Diamond Expansion Bolt Company, agrees.

"Our favorite steel-products distributor," he says, "is one of the top names on our where-to-buy list. We manufacture expansion bolts, cable reels, tools, forms for prestressed concrete, and numerous other items. We need quite a variety of steel. If it weren't for the distributor, we'd often be handcuffed. He's reliable, and his stocks are always first-class.

"Sometimes we give him a really tough play to handle. Like the time we wanted 30,000 lb of ship channels to rein orce steel reels. We were building the reels for a good customer who needed unusually quick delivery. The channels were a problem—or so we thought. But our distributor friend had the necessary stocks, and a saw that could cut them to specified lengths. He had to work fast. But even though the heat was on, he seemed to take the whole thing in stride. He made delivery on time; we finished the reels on time, and there wasn't a hitch anywhere."

MERE'S WHAT THE DISTRIBUTOR OFFERS YOU. Bethlehem sheets, bars, shapes, plates, tool steel, and other steel products are stocked by distributors in all parts of the country. Acting as your "storage space," the distributor shoulders the "cost of possession"—items such as insurance, machinery for processing steel, tax on inventories, etc. Because of his specialized equipment, he can perform such services as cutting, sawing, slitting, and even testing. And of course, he's always geared for fast delivery.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
Bethlehem Pacific Coast Steel Corporation, San Francisco





H. H. Lawyer, Purchasing Agent, Diamond Expansion Bolt Company, Garwood, N. J.

Call the distributor - your Shopping Center for Steel

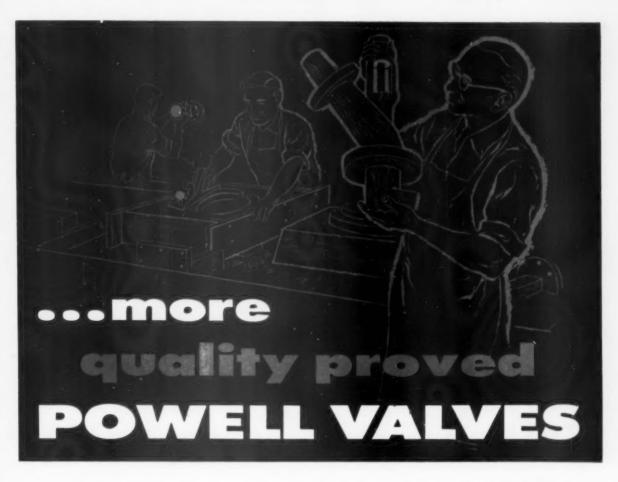




Fig. 3003—Steel Gate Valve for 300 Pounds. Outside Screw Rising Stem and Yoke.

> Fig. 150—Bronze Globe Valve for 150 Pounds W.S.P. Union Bonnet. Composition Disc.



Fig. 1793—Iron Body Bronze Mounted Gate Valve for 125 Pounds W.S.P. Outside Screw Rising Stem and Yoke.

Fig. 2337—Stainless Steel Gate Valve for 200 Pounds W.P. Screwed-in Bonnet, Inside Screw Non-rising Stem.





## for quality-crafted flow control

Ask your Powell Valve Distributor for the facts about quality-proved bronze, iron, steel and corrosion-resistant valves. Whatever your flow control problem, there's a Powell Valve to solve it.

THE WM. POWELL COMPANY, CINCINNATI 22, OHIO . . . 111th YEAR

←For More Information Circle No. 224 on Inquiry Card—Page 17 DECEMBER, 1957

For More Information Circle No. 225 on Inquiry Card-Page 17

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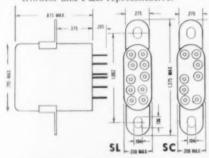
## CRYSTAL-CASE SIZE! PERMANENT MAGNET DESIGN. SHOCK: 100g. VIBRATION: 30g 55 TO 2000 cps. NO CONTACT OPENINGS.

The new SC non-latching type and SL latching type crystal-case size microminiature relays further expand the broad Potter & Brumfield relay line. Over 40 basic relays—more than 20,000 variations—are available for practically any relay requirement.

Our engineering staff is at your command and will work with your engineers in the development of special relays for your exact requirements.

Three P&B plants, located at Princeton, Ind., Franklin, Ky. and Laconia, N.H. provide the largest production facilities in the industry. Over 500 distributors across the country provide "off the shelf delivery" of most P&B relay types.

See the yellow pages of your classified phone directory for your local distributor and P&B representative.



GENERAL: Insulation Resistance: 10,000 megohms, min.

Breakdown Voltage: 1,000 V. RMS. Shock: 100g.

Vibratien: 30g 55 to 2000 cps.; 0.195" max. excursions from 10-55 cps. Temperature Range: -65°C, to +125° C.

Weight: 17.5 grams (5/8 oz.).

#### SC and SL Series Engineering Data

Operate Time: 3 MS. max. with 550 ohm coil @ 24 V. DC. (SL: 630 ohm coil at 24 V. DC).

Transfer Time: 0.5 MS max.

Terminals: (1) Plug-in for microminiature receptacle of printed circuit board. (2) Hook end solder for one #20 AWG wire. Encleaure: Harmetically sealed.

CONTACTS: Arrangement: 2 Form C.
Material: Gold flashed palladium.

Load: 2 amps @ 28 V. DC, resistive; 1 amp @ 115.V. AC, resistive.

Pressure: SC—13 grams min.;
SL—16 grams min.

COIL: Power: Approx. 1.0 watt at Nominal Voltage.

Resistance: SL-40 to 1400 ohms; SC-35 to 1250 ohms.

Duty: Continuous.

MOUNTINGS: Bracket, stud and plug-in.

PAB Standard Relays are available at your local electronic, electrical and refrigeration distributors

## Potter & Brumfield, inc.

PRINCETON, INDIANA - SUBSIDIARY OF AMERICAN MACHINE & FOUNDRY COMPANY Manufacturing Divisions also in Franklin, Ky. and Lacenia, N. H.

For More Information Circle No. 226 on Inquiry Card-Page 17



## new products

## Mechanically Agitated Cleaning Machine



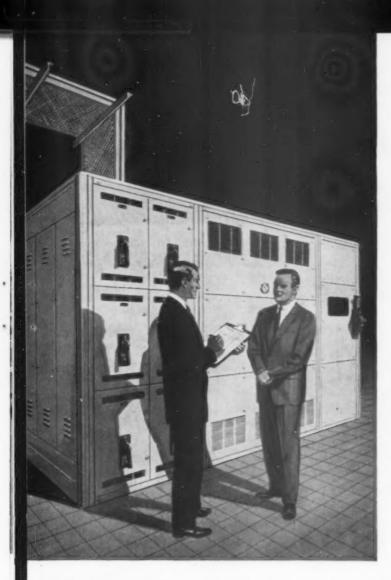
The Magnus Chemical Co., Inc., Oakwood, N.J., has introduced a mechanically agitated machine for batch cleaning of all types of metal, glass and plastic parts in solvents, mild acids and alkalis. Up to 75 lb of work can be cleaned at one time. In addition to cleaning, this versatile machine can be used for applying protective coatings to metal parts. It operates by means of compressed air, dispensing with electrical appliances and connections and minimizing fire hazards. A single lever operates the tank loading platform.

Circle No. 42 on Inquiry Card-Page 17

#### New Chemical for Curing Synthetic Resins

Citraconic anhydride, a low molecular weight liquid anhydride, has been introduced on the market by the Commercial Development Division of Chas. Pfizer & Co., 630 Flushing Ave., Brooklyn 6, N.Y. It is expected to prove useful in curing epoxy resins, preparing polyester resins and serving as a chemical intermediate. As a curing agent for epoxy resins, it can be used in epoxide casting and laminating formulations. Polyester formulations can also be prepared with citraconic anhydride for application in laminates, coatings and urethane foams.

Circle No. 43 on Inquiry Card-Page 17





Unit-Versal® Switchboards permit additional capacity in new switches, even switchboard sections, to be added any time.

Vacu-Break® Power Panels feature interchangeable switch units. Switches are horsepower-rated, have interlocked doors.



Industrial Trol-E-Duct® feeds and supports light power tools on mobile trolleys, literally puts power on wheels!

Your BullDog Field Engineer will be happy to give you any additional facts on modernizing your power system. See him.

## Power systems made to order for production increases

Expect to increase production now or in the future? If so, your electrical distribution system rates an A-1 priority. It's an area where returns far exceed outlay.

Take a BullDog distribution system, for example. All products are dependably built to perform efficiently, reduce maintenance and downtime. Designs are flexible so your changeovers can be made quickly and easily . . . so capacity can be added without obsoleting existing electrical equipment. From safety switches to unit substations, BullDog products are engineered to work well individually or dovetail into an integrated system that performs with top efficiency now . . . suits your requirements for years to come.

See your electrical contractor or consult a BullDog field engineer.

BullDag Electric Products Company, Detroit 32, Michigan 

A Division of I-T-E Circuit Breaker Company.

Export Division: 13 East 40th St., New York 16, N.Y.

In Canada: BullDag Electric Products Company (Canada) Limited, 80 Clayson Rd., Toronto 15, Ont.



IF IT'S NEW ... IF IT'S DIFFERENT ... IF IT'S BETTER ... IT'S

BULLDOG

ELECTRIC PRODUCTS COMPANY

A DIVISION OF 1-T-E CIRCUIT BREAKER COMPANY

## \$13,388 saved in 6 months





SOCONY MOBIL

Leader in Lubrication for over 92 years

in the Rubber and Plastics Molding Industry

## on maintenance, material, man-hours!

How the Vulcanized Rubber and Plastics Company made this substantial saving with the help of Socony Mobil!

In just six months the Vulcanized Rubber and Plastics Company has saved twice the total value of all its oils and greases purchased during the whole year of 1956! Beginning January, 1957, the company protected their Morrisville, Pennsylvania, plant with a Socony Mobil program of Correct Lubrication.

Plant engineer and Mobil lubrication specialists concentrated all their efforts towards improving efficiency of the plant's 42 hydraulic systems. Hydraulic fluids were standardized . . . filtering schedules set up . . . regular maintenance periods established. Periodic

Mobil laboratory reports helped check oil quality and efficiency of filtration system.

Savings were swift and sizable. Downtime dropped sharply. Hundreds of repair and maintenance manhours were eliminated . . . material costs cut. In total, \$13,388 saved on the plant's hydraulic systems.

This is Correct Lubrication in Action. The costcutting program that devotes Mobil specialists, Mobil facilities, and Mobil's 92 years of lubrication experience to assure utmost protection and full service life from every Mobil product.

## SUMMARY OF SAVINGS ACHIEVED THROUGH CORRECT LUBRICATION

- \* \$1,628 saved on hydraulic oils—Following Mobil recommendations, plant replaced eight different hydraulic oils with only two Mobil products. This improved dispensing control . . . simplified reclamation . . . cut application time.
- \* \$2,400 saved on hydraulic system maintenance—Before Mobil program, maintenance on hydraulic pumps, screens and valves in the injection molding department required two men on full-time basis. Program has proved so effective that equipment today requires only periodic inspection.
- \* \$100 per month saved on repair parts—Prior to Mobil program, shafts on Vane-type pumps were snapping due to contaminants wedging into close-tolerance clearances. Cleaner oil and regular application under Mobil program eliminated problem . . . cut repair parts cost \$600 in 6 months.
- \* \$8,760 recovered on press room operation—Compared to same period in 1956, savings made in Vulcanized Rubber and Plastics Company's Press Room amounted to: \$3,960 saved through elimination of downtime. \$4,800 cut by reducing maintenance man-hours. Total—\$8,760 saved in six months.

## Correct Lubrication

A proved program to reduce manufacturing costs

SOCONY MOBIL OIL COMPANY, INC., and Affiliates: Magnolia Petroleum co., general Petroleum corp., mobil overseas oil co., inc.



#### Pneumatic Tired Casters Protect Loads



Nutting Truck & Caster Co., 1201 W. Division St., Faribault, Minn., says that its matching swivel and rigid casters provide the shock absorbing qualities needed to transport fragile or valuable loads over rutted floors or rough ground. They are equipped with 10" semi-pneumatic or full pneumatic rubber tired wheels. The semi-pneumatic type is puncture proof. The pneumatic type has inner tubes and 4-ply casings. Both types are demountable for easy on-the-job replacement. They feature heavyduty top plate and fork side construction.

Circle No. 44 on Inquiry Card-Page 17

#### Router Performs Intricate Carpentry Work



A one hp, heavy-duty router, designed for the finest intricate joinery and cabinet work, by Black & Decker Mfg. Co., Towson 4, Md., is equipped with a

micrometer-type depth adjustment for accurate, quick setting. Powered by a specially built motor, it operates by direct drive, thus dispensing with gears. Speeds range up to 22,000 rpm. The built-in heavy-duty ball bearings are permanently lubricant-sealed. It is equipped with a positive grip collet-type chuck which is tightened with two wrenches supplied as standard equipment. Weight of router is 7 lb.

Circle No. 45 on Inquiry Card-Page 17

## Atomic Lamps Speed Precision Measuring



Atomic isotope tubes are being used by the Eli Whitney Meterology Laboratory, maintained by the Sheffield Corp., Dayton 1, Ohio, as "lamps" to provide super accurate light sources for measuring dimensions as close as one millionth of an inch. These Krypton 84 atomic isotope tubes, for use in advanced measurement standards development, create light sources of the utmost known precision and purity.

Circle No. 46 on Inquiry Card-Page 17

## "Two-In-One" Pipe

The Pipe Division of Republic Steel Corp., Youngstown, Ohio, has developed the first steel pipe, protected against external corrosion by a plastic coat of armor. It is designed for use as buried pipeline in the gas, oil and chemical industries. Because of its polyethylene coating, it withstands varying conditions of corrosive soils, water, fumes and electrochemical action. At the same time, its main core of steel provides the pipe with strength for pressures and factors of safety.

Circle No. 47 on Inquiry Card-Page 17

## Paper Packages Without Staining Products



An unusual paper has been perfected for use in special industries where the product to be shipped requires a waterproof, non-staining package. The chief ingredient of the paper is Pliolite latex, a colloidal suspension of minute styrene-butadiene rubber particles dispersed in water. It is compounded with various resins and extenders to form a laminant for the production of this special paper. Through use of high tensile, steel-like fiber reinforcement, the paper is made extremely tough and durable. For information, write to Goodyear, Corp., Akron 16, Ohio.

Circle No. 48 on Inquiry Card-Page 17

## Presses Handle All Forming Operations



All steel hydraulic presses of 160 to 1500 ton capacity are being produced by The Perry Co., P.O. Box 2057, Waco, Texas. They are designed to handle all metal forming operations and for trimming and punching vacuum formed plastics as well as other materials. All units are equipped with NE-MA 12 or JIC standard electric circuits.

Circle No. 49 on Inquiry Card—Page 17

For More Information Circle No. 229
on Inquiry Card—Page 17→

PURCHASING



Here, Perspective Engineering conceives and creates fasteners and components of metals and plastics for mass-assembly. Skilled craftsmen produce these parts by the millions in integrated manufacturing facilities. Through this unique combination of talent and machinery, industry is served with maximum design flexibility and production speed. Assembly time is saved, costs are reduced.

FASTEX® PARTS PICTURED ABOVE ARE: . O Fasteners (T.M.), fasten with a quarter furn.?. Plasti-Supports (T.M.), blind-assembly shelf supports. 3. Plasti-Grommets 8, self-retaining blind screw receptacles. 4. Plasti-Plugs & improve product appearance. 5. Molding Clips are self-adjusting, vibration proof. 6. Plasti-Rivets 8., one-piece, self-expanding for blind assembly. 7. Springrip Fasteners with internal teeth. 5. Plasti-Rings 8., self-retaining plastic shaft retainers. 9. Precision Stamped Gears, complete range of types and sizes. 10. Speed Nuts 8, economical self-retaining nuts. 11. Engineered Stampings speed assembly. 12. Plastinite® one-piece strain-relief grommets. 13. Nylon Spiroid® Gears offer new space and weight economies. 14. Engineered Molded Plastic Parts, low-cost, time-saving.

FASTEX

DIVISION OF ILLINOIS TOOL WORKS

195 Algonquin Road, Des P

SHAKEPROOF-FASTEX Division of Canada Illinois Tools, Ltd. Toronto, Ontario





#### Resin Lining Makes Cans Acid-Proof

A new phenolic resin for use in can linings is said to resist acids far more effectively than materials currently used for the purpose. Designated #3725, it is priced 26% lower than the nearest comparable resin marketed. Specifically, the resin is a 100% phenolic, non - heat - reactive oil - soluble resin. It possesses superior chemical resistance as evidenced by the fact that immersion for more than 60 days in concentrated sulfuric acid resulted in only mild surface changes. In addition to outstanding resistance to acids and alkalis, it has remarkable durability and hardness. The manufacturer is Barret Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N.Y.

Circle No. 50 on Inquiry Card-Page 17

#### Torque Adjustable Screw Driver



Dixon Automatic Tool, Inc., Rockford, Ill., is placing on the market an automatic screw driver, able to drive screws and nuts up to 5/16" thread sizes at speeds up to 60 per minute. Operating on 80 psi airline pressure, the tool has an air motor with easily adjusted torque range from 10 to 108 inch-pounds, and exclusive

sensing which stops the machine if a screw or nut is not properly placed or torqued. A versatile motor mounting makes it easy to inter-change different driving units for various applications.

Circle No. 51 on Inquiry Card-Page 17

#### Wire-Braided Hose for Abrasive Conditions



Acme Rubber Mfg. Co., Div. Acme-Hamilton Mfg. Co., 115 Meade St., Trenton, N.J., has designed a line of flexible high pressure wire braided hose, handling pressures up to 1500 psi, for use on compressors, wagon drills and jumbos in tunneling, quarrying, coal mining and road building applications. It is particularly suited for heavy duty work where abrasion on the hose is a problem and where maximum flexibility and lighter weight are important. The hose, available in ID sizes from 1/2" through 21/2", consists of an oil-resistant neoprene tube. stranded wire braid and an abraision - resistant hard rubber covering.

Circle No. 52 on Inquiry Card-Page 17

#### No Downtime Installing This V-Belt

A link type V-belting, designed for normal, oily or high temperature operating conditions, is available for use where the conventional or endless type of V-belt cannot be installed or replaced without costly downtime. It is extremely flexible and operates efficiently over small sheave diameters. Each link is pre-stretched under controlled tension. Reinforced rivets provide a positive lock-fit. The belting comes in all sizes to cover every type of application. It is a product of Dayton Rubber Co., Dayton, Ohio.

Circle No. 53 on Inquiry Card-Page 17

## Metal Nameplate is Applied in Ten Seconds



Deep - anodized, self bonding metal nameplates, that need only ten seconds to apply, are now available. They have a permanent pressure sensitive adhesive that requires no activation by water, solvent or heat. All that is required is to remove the release liner and apply. Made from .004" aluminum, the nameplates adhere instantly to metal, glass, plastics, and wood surfaces of every character-painted, smooth, flat, wrinkled or curved. The self-bonding nameplates require no holes to drill, and no pins, fasteners or screws. They are available in a wide range of colors from the manufacturer, W. H. Brady Co., 727 W. Glendale Ave., Milwaukee 9, Wis.

Circle No. 54 on Inquiry Card-Page 17

## Lightweight Face Shield



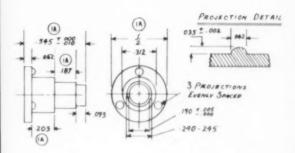
A new face shield which combines unusually light weight and strong, tough wearing qualities is announced by Chicago Eye Shield Co. Construction is of translucent fiber glass material. The new face shield, Cesco No. 438FT, is easily tilted up off the face and has quick and easy fitting.

Circle No. 55 on Inquiry Card—Page 17
For More Information Circle No. 300
on Inquiry Card—Page 17→

from 5 Expensive Operations to-

# 2 blows!





Shaft for nylon rollers used in cabinet drawers. The blank formerly was made in 4 cuts on a screw machine — then the 3 tiny projections which anchor the nylon rollers were spot welded. Now Milford cold heads the part from Keystone "XL" Wire with one secondary operation to turn the small tenon. The two major shoulder diameters, head and projection, are produced in just two blows.



# The MILFORD RIVET & MACHINE CO. finds Keystone Wire saves 70% in Costs...85% in Time

Here is a typical example of how Milford uses Keystone "XL" Wire in meeting difficult cold upsetting requirements. Milford estimates that savings of 70% in cost and 85% in time have been effected by cold heading the part illustrated above as compared with the four operations it formerly took on a screw machine plus spot welding. Milford puts Keystone "XL" Wire to work at its five plants — Elyria, Ohio; Milford, Conn.; Hatboro, Pa.; Aurora, Ill.; and Norwalk, Calif. Milford recognizes flowability of Keystone "XL" Wire as the key to profitable runs of quality fasteners.

Manufacturers come to Milford with specific fastener requirements — then skilled Milford engineers design quality cold-formed parts. Here's where *teamwork* pays off. Milford and Keystone

Keystone Steel & Wire Company, Peoria 7, Illinois

KEYSTONE WIRE FOR INDUSTRY representatives find the most practical solution to metallurgical problems. This results in high quality—yet economical parts—fabricated perfectly for the job they were designed to do.

Close counsel and analysis of your wire problems are services you receive from your Keystone representative. Call him today!



Keystone Steel & Wire Company Peeria 7, Illinois

Brand New . . . COLD HEADING FACTS FOLDER . . . send coupon today! New folder discusses uses, applications, methods, technical facts, wire requirements.

Nome\_\_\_\_\_Title

Street.

City\_\_\_\_\_State



# This HURON Lamination Die Gave Initial Run of 426,000!





Write for BLUE SHEET on HURON

This concise four-page folder gives all needed handling and shop treatment details on Huron. Included is certified laboratory information on physical characteristics, and complete data on forging, annealing, hardening, tempeting, etc. Als for your copy.

Address Dept. P-96

**A-L HURON** high-carbon, high-chrome die steel was the material used in this motor lamination die. Here was the result when the die was run on a 45-ton Bliss press at 210 strokes a minute:

- 1 Initial run was 426,000 pieces
- 2 Average run since has been 250,000 pieces
- 3 Although burr tolerance is .003", grinding of punch and die between runs has not exceeded .008".

**HURON WAS SELECTED** because of its known high resistance to wear, especially under heavy pressures, and its excellent non-deforming qualities. Because Huron is an oil-hardening steel and hardens uniformly to a great depth, a consistent production rate after each grind was assured.

There's an A-L Tool Steel that will help solve your cutting, forming or blanking problem. Call our nearest office or distributor, or write Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa.

For nearest representative, consult Yellow Section of your telephone book.

For complete MODERN Tooling, call Allegheny Ludlum



# when you buy this label SAFETY EQUIPMENT HEADQUARTERS YOU buy more than a product

- Service calls
- Safety counselling by factory-trained MSA Sales Engineers
- Matching the right equipment to the right job
- On-the-spot instruction on how to use MSA equipment
- Largest Research Laboratory anywhere devoted entirely to safety
- 3600 items to choose from...a complete line selection

## MINE SAFETY APPLIANCES COMPANY

201 North Braddock Avenue Pittsburgh 8, Pennsylvania

At your service: 83 Branch Offices in the United States and Canada

## Cast iron pipe maker cuts costs 30% with COTTON\*



dry & Pipe Division are supplied by Union Garment & Towel Supply Co., 21 Clapp St., Boston 25, Mass.

· Management of the Warren Foundry & Pipe Division, Shahmoon Industries, Inc., Everett, Mass., has reported a 30% saving on washroom towel costs and definite improvement in both maintenance efficiency and employee relations. Their method, at this cast-iron pipe producing plant: providing cotton toweling in the washrooms used by their 370 plant and office workers.

Warren found that washrooms were easier to clean and keep clean. This neatness, together with cotton's softness and comfort, were keenly appreciated by personnel. And management was certainly interested in the decreased fire hazard provided by cotton toweling.

Why not see what cotton can do in your plant or building? For free booklet on cotton towel service, write Fairfax, Dept. P-12, 65 Worth Street, New York 13, N. Y.

## Here's How Linen Supply Works...

You buy nothing! Your linen supply dealer furnishes everything at low service cost-cabinets, pickup and delivery, automatic supply of freshly laundered towels and uniforms. Quantities can be increased or decreased on short notice. Just look up LINEN SUPPLY or TOWEL SUPPLY in your classified telephone book.

## Clean Cotton Towels . . .

Sure Sign of Good Management

Fairfax Towels



WELLINGTON SEARS COMPANY, 65 WORTH STREET, NEW YORK 13, N. Y. For More Information Circle No. 303 on Inquiry Card-Page 17



#### Screwdrivers, Nut Setters Increase Output



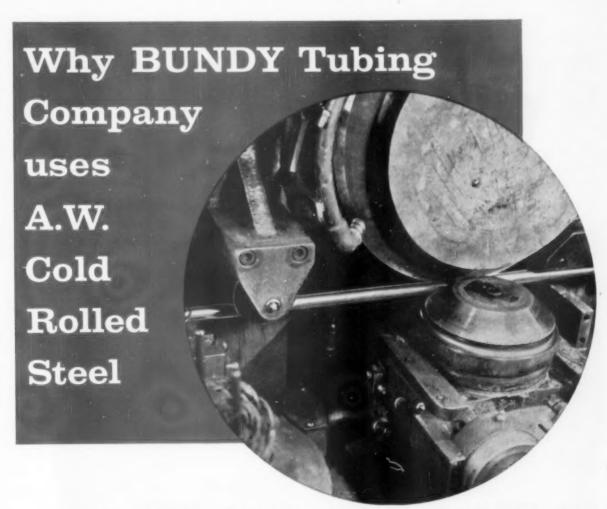
Gardner-Denver Co., Quincy, Ill., brought out a series of air powered screwdrivers and nut setters that have a complete speed and torque range-from high speed, low torque to high torque, low speed. The air tools feature interchangeable gears, spindles and chucks which afford quick conversion to various jobs. Side air intake and large exhaust ports provide more efficient operation. Capacities are up to 5/16". There is a choice of straight drive, positive and cushion clutches, with holders for 1/4" and 7/16" hex socket drives.

Circle No. 56 on Inquiry Card-Page 17

## Lubricant Protects Over Wide Temperatures

A lubricant, which possesses qualities of a true plastic and so achieves long term lubrication has been developed by Gulf Oil Corp., Pittsburgh, Pa. It is designed mainly for use in business machines. It lubricates in a range of temperatures from below freezing to 150 F, thus being adapted to cash registers used in outdoor markets as well as to electronic calculators which generate considerable internal heat. Machine parts can be easily coated with the plastic petroleum by brushing or dipping in solvent-diluted baths.

Circle No. 57 on Inquiry Card-Page 17



When 95% of today's cars use Bundy Tubing in an average of twenty applications, you can bet that the tubing must be right . . . and that the requirements placed on steel quality are exacting.

Bundy requires sheet steel that will meet tough demands of precision forming . . . provide top end-product performance over long miles of road wear . . . yet hold tubing production costs in line with vigorous competition.

Alan Wood produces and delivers cold rolled sheet to Bundy . . . and all other customers . . . on an "individual" order basis. Alan Wood's own metallurgists investigate the uses of cus-

tomers' end-products and fabricating methods —then control the production of steel for each customer through each step-from mine to mill.

As a result, customers have steel to exact specifications. Production down time is minimized and rejects due to sub-standard material are cut...all of which helps improve customers' profits!

If your product requires uniform, highquality steel, investigate the advantages of Alan Wood services and integrated production. Write Marketing Div., Dept. CR-S68 today.

#### ALAN WOOD STEEL COMPANY

steelmasters for more than a century and a quarter . CONSHOHOCKEN, PA.

DISTRICT OFFICES AND REPRESENTATIVES: Philadelphia New York · Los Angeles · Atlanta · Boston · Buffalo · Cincinnati Cleveland · Detroit · Houston · Pittsburgh · Richmond · St. Paul San Francisco · Seattle

Montreal and Toronto, Canada-A. C. Leslie & Co., Limited

IRON PRODUCTS
"Swede" pig iron

"Swede" pig tron
Steel Products
Plates (sheared)
A.W. Dynalloy
(high strength
steel)
Hot rolled sheets
Hot rolled strip
Cold rolled strip
Cold rolled strip

ROLLED STEEL FLOOR PLATE A.W. ALGRIP A.W. Super-Diamond pattern COAL CHEMICALS

A.W. CUT NAILS Standard & Hardened

MINE PRODUCTS on ore concentrates

coundry, industrial & metallurgical PENCO METAL PRODUCTS DIVISION Steel cabinets, lockers & shelving

-AW

# Totally

YOURS

from the case of the

A. O. Smith motor man

TOTALLY ENCLOSED AND EXPLOSION-PROOF MOTORS
Polyphase with explosion-proof models available in Underwriters Class I and Class

... plus these and other types to comprise the nation's 3rd full motor line

Il construction. Available in all frame sizes—182 and up.

# Enclosed Motors 1/3 to 500 hp

## Dressed to kill your motor application and maintenance problems

Now from A. O. Smith — a complete line of totally enclosed motors 1/3 to 500 hp — that cost a little more than ordinary motors, but offer a big bonus in lasting, trouble-free performance. Their electrical design is based on —

- Ample torque to assure dependable operation through overloads or voltage drop.
- Balanced insulation to afford maximum protection against phaseto-phase or phase-to-ground breakdowns during high amp surges.
- Dependable heat dissipation to avoid burnouts even when the motor is covered by dirt and grease.

What's more, these totally enclosed and explosion-proof motors are truly "workhorses" — built with precision-machined rolled steel or heavy cast iron frames that completely enclose all electrical parts and bearings... resist mechanical shock and abuse... fight off corrosion, toxic vapors and dust... are easy to clean... and provide for permanent alignment of moving parts and lengthened bearing life.

And — like all A. O. Smith motors — they're readily available from stock . . . will be supplied along with all the engineering and application assistance you want or need. And you get 24-hour response on parts or service from any of the 300-plus authorized A. O. Smith motor service stations.

Small wonder, then, more and more motor users are specifying A.O. Smith—"the motors that take the beating and leave the profit to you!"

Get the complete story from your A. O. Smith Motor Man or write direct for his name.

ELECTRIC MOTORS

Tipp City, Ohio
A. O. Smith International S. A., Milwaykee I., Wisconsin, U. S. A.

a better way

Through research





FRACTIONALS — V<sub>2</sub> — 1 hg — Rigid or resilient base, capacitor start or polyphase induction motors. Choose from horizontal or vertical, single-phase or polyphase models. Single-phase 115/250 volts — polyphase 208-220/440-550 volts. Over 1,000 standard models to choose from.

VERTICAL MOLLOW SMAFT MOTORS — 1-700 hp — Sturdily built, totally enclosed, weather-proof and explosion-proof motors. Feature heavy cast iron construction, extra-high downthrust suitable for momentary up thrust conditions, scaled bearing chamber, easy access for inspection or service. Available with interchangeable P and PH bases.

proof, totally enclosed and explosion-proof motors specifically designed for all types of centrifugal pumps. New and old NEMA frames available are easily made to operate on non-standard power sources.

For More Information Circle No. 305 on Inquiry Card-Page 17



You get quickest delivery at lowest cost from your LOCAL DISTRIBUTOR.

Williams makes the broadest line of its kind. Write for Catalog 302.

J. H. WILLIAMS & CO.

403 VULCAN STREET, BUFFALO, N. Y.

BUFFALO . NEW YORK . CHICAGO . LOS ANGELES

For More Information Circle No. 306 on Inquiry Card-Page 17

## new products

## Impact Wrench With Rugged Power



An impact wrench, built for rugged wear by the Black & Decker Mfg. Co., Towson 4, Md., has a torque range of 300-450 ft/lb. It has a die-cast aluminum housing, lubricant - sealed | ball bearings and heat-treated gears. Powered by a motor for use on a-c or d-c (either 115 v or 220 v), the tool is ideal for large, heavy nut running of 7/8" diam. and up, as well as for cap and lag screw driving and removal. A specially designed centrifugal fan and ventilating system keeps the tool cool at all times. An instant release trigger switch provides splitsecond power control.

Circle No. 58 on Inquiry Card-Page 17

## Lithium Alloy Keeps Strength at 400F

Lithium, the lightest of all metals, has provided the key to a new aluminum alloy. The lithiumaluminum formulation maintains high strength up to 400F. Hitherto, only stainless steel or titanium offered solutions to the temperature problem. But they are both costly and add to the weight of airframe structures. The lithium which will maintain alloy, strength when supersonic speeds develop aircraft skin temperatures of 350 F, is actually 3% greater. The lithium alloy is a product of Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh 19, Pa.

Circle No. 59 on Inquiry Card-Page 17

## How to ship wisely ... and well



The boss used to rage at each shipping delay

And swoop down on lack like a great bird of prey



Now they bill and they coo...for, as you might guess Their shipping's dependable with RAILWAY EXPRESS!

## The big difference is

Put yourself in your customer's shoes. Would you stand for the time and trouble that late deliveries could cost you? Of course not!

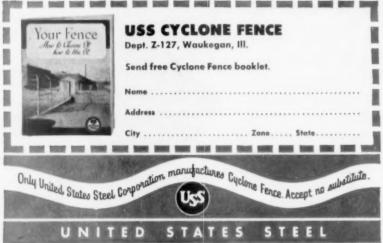
That's why it pays to specify shipment by Railway Express.

Whether sending or receiving, you can always count on speedy, prompt service. And you get domestic coverage no other company can match. What's more, you can now speed shipments to and from almost anywhere in the world via Railway Express' new World Thruway Service. So, call Railway Express today. It's the complete rail-air-sea shipping service.





- There's only one Cyclone Fence. It's the quality fence.
- It's the largest-selling chain link fence in the world.
- · Cyclone Fence is installed by factory-trained experts.
- Send coupon for free booklet that tells all about fence.



For More Information Circle No. 308 on Inquiry Card-Page 17



#### **Drum Carrier For** Safe Dispensing



A drum carrier has been placed on the market which one operator can quickly attach, without tools, to any standard steel drum. It ensures non-tilting transit via monorail or crane, or for hoisting with chain block. Positive tilt locks permit one man to easily and safely control tilting of drum for mixing or dispensing contents over a receiving tank. Welded allsteel construction assures years of trouble-free service. The carrier is made by Morse Mfg. Co., Inc., East Syracuse, N.Y.

## Circle No. 60 on Inquiry Card-Page 17

## System Increases Factory Storage Capacity 50%



Mobile Racks, Inc., 369 Lexington Ave., New York 17, N.Y., has developed storage equipment that puts standard-type files, racks or (Please turn to page 168)

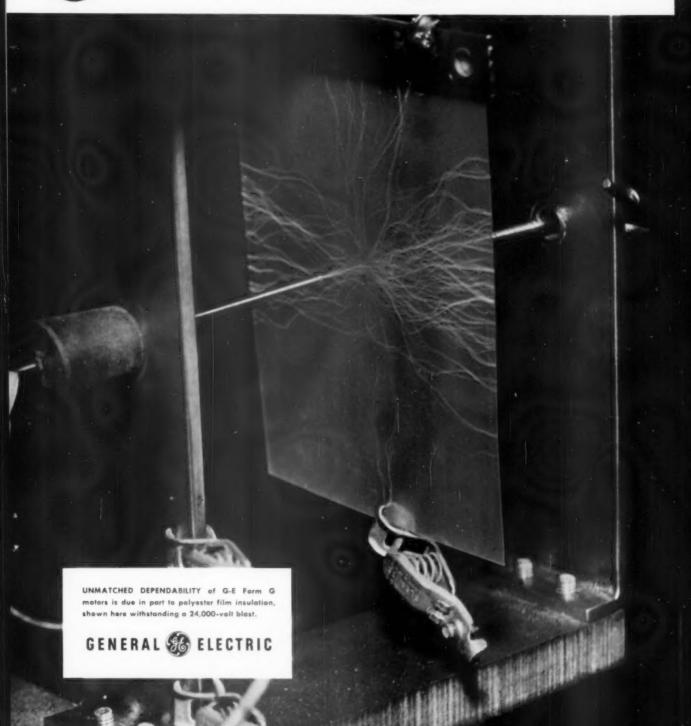
For More Information Circle No. 309 on Inquiry Card—Page 17→

PURCHASING



## **TOUGHER INSULATION!**

... just one of many General Electric Form G
motor\* features which can help improve
your product and lower your costs!



## HERE'S THE MOTOR YOU NEED -



## Try this 3-step program which can help you IMPROVE YOUR PRODUCT AT A SAVINGS!

STEP 1: Call your G-E Apparatus Sales Office. General Electric sales engineers have helped hundreds of customers save countless thousands of dollars by taking full advantage of all the benefits of the G-E Form G motor design. Combine your knowledge of your product with his knowledge of motors, and take . . .

STEP 2: With the help of your G-E sales engineer, choose the exact motor you need from the complete line of G-E Form G motors. Try it on a sample basis. No matter which one you select, it will have all the years-ahead features shown at right, and it will be a proved performer (more than 6 million are in use).

STEP 3: Together, decide how to take maximum advantage of the inherent cost-reducing abilities of the G-E motor. Your discovery may be as simple as that of one manufacturer who found that the close tolerances of the G-E Form G motor permitted him to

mount the motor direct, eliminating several costly parts. A very slight adjustment saved him more than 30¢ per unit!

This 3-step program has led thousands of manufacturers into cost reductions. A few examples are shown at right, under the flap. There are hundreds more—like the compressor builder who cut over-all manufacturing costs 25%. Or the pump manufacturer who doubled sales of his streamlined product. Or another who cut his shipping costs by 35%. Or still another who hasn't heard of a motor failure on his product in three years!

The results this program can produce for you are not mythical—they're tangible, measurable benefits that can actually affect your profit picture. A motor that has done so much for so many can help you, too. Why not give it a try? Take the first step today—call your G-E Apparatus Sales Office now!

Product literature and actual case histories available on request from General Electric Co., Section 702-61, Schenectady 5, N. Y.

GENERAL ( ELECTRIC

## -- in G-E Years Alread DESIGN



MYLAR\* POLYESTER FILM insulation (right) has 35 times the moisture resistance of ordinary motor insulation.

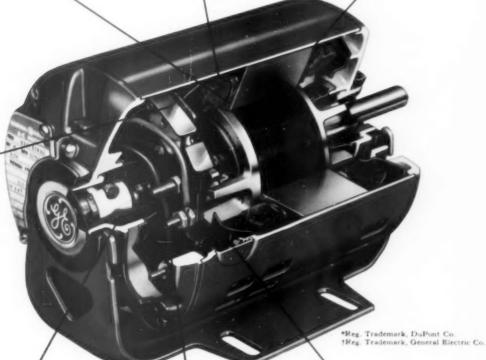


FORMEX† INSULATED WIRE can be bent, twisted, crushed without harm. Also resists heat, moisture, corrosion.

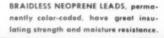


PROTECTIVE VARNISH on entire stator assembly provides protection from maisture, abrasion and rust.





LARGE OIL RESERVOIR holds 50 % more oil than old-style designs, contributes to doubled lubrication life.



SPEED NUT welded inside motor shell permits fast, easy conduit connection from outside—speeds assembly.







## - - - PERFORMANCE-PROVED MIL



**BALANCED DESIGN.** "G-E Form G motors give us everything we want for our shallow-well and deep-well jet, centrifugal and swimming pool pumps: moisture protection, plenty of torque and overload capacity, assembly savings, and dependable operation."



**WEIGHT SAVINGS.** "The G-E Form G motor has speeded assembly, reduced shipping costs, and increased the portability of our tying machine. Complaints are a rarity. In 50 years, we've used nothing but G-E motors. What more can we say?"



TOP PERFORMANCE. "Our automatic poultry feeder requires a motor with enough break-away torque to pull a flat chain through a feeding trough. It must meet tough duty cycles in temperatures from above 100 F to below freezing. We're 100% sold on G-E motors."



COMPLETE LINE. "We make many types of pumps, but the completeness of G.E.'s line permitted us to standardize four years ago. We've saved time and money, and the Form G motor has added to pump efficiency."

## **MILLIONS OF TIMES OVER!**



**ALL-ANGLE MOUNTING.** "The Form G motor has been used in many different positions on our wire strippers, but it always performs perfectly. In nine years, we've never had to repair or replace a General Electric motor."



**EXTREMELY RUGGED.** "Our portable filter for swimming pools must survive even hurricanes and blizzards. In 24-hour-a-day tests under the worst conditions, the G-E Form G motor performed flawlessly. It has contined to do so in actual use."



DEPENDABILITY PLUS. "An electric motor that leaked oil when installed on our garage door opener would be a serious problem. Since we switched to the G-E Form G motor, we've never had a complaint of any kind. In addition, the G-E motor has simplified our manufacturing procedure, and improved our product mechanically, electrically, and visually. We think the General Electric Form G motor is tops in its field."



MAXIMUM EFFICIENCY. "To deliver more air with less current consumption, we chose the G-E Form G motor for this all-purpose air compressor. It's quiet, requires little maintenance."

motors."

MP CO.

feeder

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nps, but o standney, and iciency."

# What good is business publication advertising?



Frank Kistenberger Metallizing Engineering Co., Inc.

Sells industry

No one is in a better position to give a hard-boiled, practical answer to this question than the men who spend their working lives on the sales front...the men the ads are supposed to help...the men who sell.

Here is the statement of a salesman who knows what advertising does for him when it appears in the industrial, trade or professional publications that serve the specialized market to which he sells:

#### Says Mr. Kistenberger:

"I happen to know that better than 50% of my sales to new companies can be traced to leads from our business paper advertising. Another 25% of my sales to new owners I close after following up leads that can't be traced directly to our advertising, but I know darn well that that's where they come from because that's about the only place they could learn about our metallizing systems.

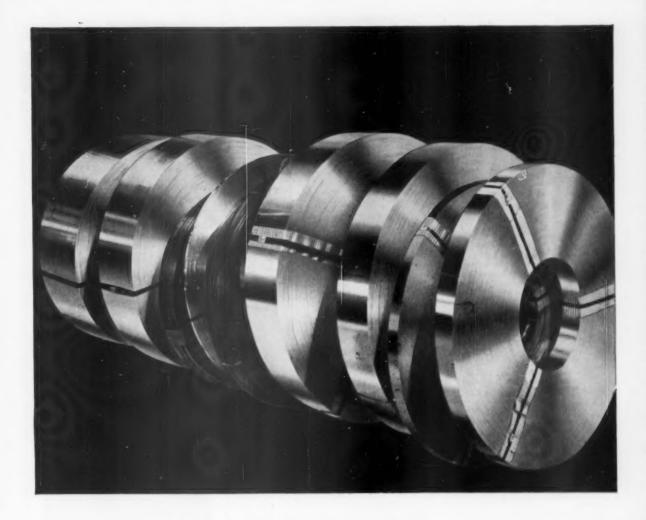
"It's been my experience that our trade advertising is getting to the right people. In many cases this man is an executive who is hard to see on a cold call. But he's a guy that will take the time and trouble to read and he's just the one to drum up interest in metallizing down the line in his company. In other words, you get more action if the suggestion comes down to the production department or the plant engineer from this executive. Of course, I don't mean to say that people will just read about a product like ours and instruct someone to write out an order. It's not that simple. But they do know about metallizing from our advertising and sometimes a surprising amount. That was particularly true of our new ceramic spraying equipment which was introduced last year and which got us into fields we'd never been in before. I think that getting a new product known is usually a pretty tough job but the leads our advertising got us were a big help in reaching the right people."

Why not ask your own salesmen what your company's business publication advertising does for them. If their answers are generally favorable you can be sure that your business publication advertising is really helping them sell. If too many answers are negative it could well pay you to review your advertising objectives — and to make sure the publications that carry your advertising are read by the men who must be sold.

## **Purchasing Magazine**

One of the 207 members of National Business Publications, Inc. ...each of which serves a specialized market in a specific industry, trade or profession.





# it's CRUCIBLE for the widest assortment of cold rolled specialty steels

Crucible has the largest assortment of cold rolled specialty steels you'll find anywhere. And delivery is dependable—in the size, grade, gauge, or analysis you want.

What's more, Crucible's steelmaking experience—its improved mill facilities—combine to bring you cold rolled steels of optimum uniformity... finer finish... better edges... flatter strip.

No need to shop around—call Crucible for carbon spring steel, alloy strip steel, or *any* ferrous analysis that can be cold rolled. For more information, write now for your copy of the 32-page booklet, "Cold Rolled Specialty Steels". *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.* 

CRUCIBLE

first name in special purpose steels

Crucible Steel Company of America

For More Information Circle No. 310 on Inquiry Card-Page 17



## AURORA PUMP DIVISION THE NEW YORK AIR BRAKE COMPANY,

AURORA . ILLINOIS 12 LOUCKS STREET EXPORT DEPARTMENT - Aurora, Illinois - Cable Address "NYABINT"

For More Information Circle No. 311 on Inquiry Card-Page 17

## **Bands For Every Purpose**



ONE PIECE - SEAMLESS Outstretch - Outlast all others

We'll make bands for your special needs. All Plymouth Standard Bands meet Federal Specifications. NATIONALLY DISTRIBUTED — AT YOUR REGULAR SUPPLIERS.

PLYMOUTH RUBBER CO., INC.

Since 1896 CANTON, MASSACHUSETTS NOW YOU'LL RECEIVE 14 EXTRA ISSUES OF PUR-CHASING MAGAZINE AT NO EXTRA COST! START-ING JANUARY 6, 1958, LOOK FOR YOUR COPY OF PURCHASING EVERY OTHER WEEK . . . .

> 26 ISSUES A YEAR **INSTEAD OF 12**

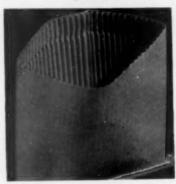


(Continued from page 160)

shelves on wheels. This increases the capacity of factory, and office storage and filing areas up to 50%. Thus, the need for the usual space wasting aisles between rows of cabinets is eliminated. The shelf units on the track can be rolled to either side and thereby permit easy access to any unit in rows behind. One storage unit is omitted from each row of cabinets. The load capacity of each unit is 11/2 tons. Even so, units can be easily moved by one girl.

Circle No. 61 on Inquiry Card-Page 17

## **Cushioned Bags Protect** Shipments



An all-purpose cushioned shipping bag is announced by Sher-Paper Products Corp., man Newton Upper Falls 64, Mass. Lightweight, they are made from a single-wall corrugated sheet. They offer resilient cushioning on the inside; tough, scuff- and puncture-resistance on the outside. Since these bags have their cushioning built in, there are no messy fillers to leak out into the products inside, if the bag is worn out in transit. They are 50% lighter and more compact than conventional bags which use bulky fillers. They are available in all standard sizes.

Circle No. 62 on Inquiry Card-Page 17

# What's YOUR Roller Bearing Problem? HYATT BUILDS AMERICA'S MOST COMPLETE LINE OF CYLINDRICAL ROLLER BEARINGS TO SOLVE IT

#### HYATTS ARE DESIGNED:

FOR SPEEDS UP TO 50,000 RPM

From bearings for slowmoving construction equipment to supersonic jet engines, Hyatt builds roller bearings to meet almost any speed requirements.



## FOR TEMPERATURES FROM BELOW ZERO TO 450°F.

Conventional steels can be stabilized by heat treatment for operation up to 450°F. Beyond this we can provide special high-temperature steels for special needs.



#### FOR LOADS RANGING UP TO 103,000 POUNDS

From small bearings for lawn mowers to the huge heavy-duty types used in giant diesel locomotives, Hyatt builds bearings for every load requirement!



## IN SIZES RANGING FROM %" OD TO 14" OD

Hyatt offers a wide variety of bearing types and sizes. Each Hyatt Roller Bearing assures maximum life in each Individual application.

## BETTER!

Life, load, speed, temperature, shaft location—almost every roller bearing application problem you are likely to face has already been encountered by Hyatt engineers.

Armed with a complete line of bearings, they can usually come up with an answer to your particular design problem. In addition to competent design assistance, you can also depend upon the consistent high quality and uniformity of Hyatt Bearings.

#### HY-LOAD

High-capacity cylindrical roller bearings for heavy radial loads and light or intermittent thrust loads.



#### TRUNNIONED ROLLER

For industrial trucks, textile machinery, gear pumps, conveyors, hoists and agricultural equipment.



#### WOUND ROLLER

A three-part separable bearing, which provides maximum resistance to shock, abrasion and fatigue.

where large-diameter shafts are usually employed.

These are a few of the reasons why experienced design engineers have learned to reach for a Hyatt catalog. If you need the technical assistance of a sales engineer, call or write Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey, Pittsburgh, Chicago, Detroit, Oakland, Calif.

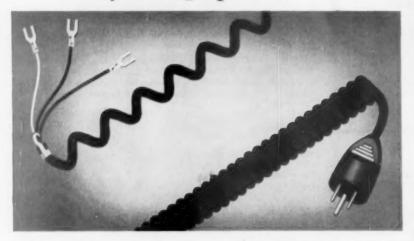
FOR REPLACEMENT BEARINGS,
SEE YOUR MYATT INDUSTRIAL BEARINGS DISTRIBUTOR



HY-ROLL BEARINGS
FOR MODERN INDUSTRY

## Specify **© COILED CORDS**

., . add important convenience and safety features to your equipment!



## Cords Limited COILED CORDS are engineered for specific application!

Coiled Cords, first choice in the communications industry, find numerous important applications in other fields! In addition to user convenience, Cords Ltd. Coiled Cords provide a safety factor preventing costly industrial accidents. Maintenance-wise, Coiled Cords give much longer service than straight cords by eliminating common abuses that shorten serviceability.

Product Data: A leader in the development of Coiled Cords, Cords Limited is a major supplier of this product to the telephone and communication industries. Coiled Cords are engineered for specific applications. Special oil, acid and moisture resistant properties of the jackets protect the product under unusual conditions. The most modern molding facilities for plug and conductor termination are available at Cords Limited to serve your needs quickly and economically!

WRITE TODAY for complete details . . . your quotation requests will receive immediate attention!





## CORDS LIMITED

ESSEX WIRE CORPORATION

DeKalb, Illinois

For More Information Circle No. 314 on Inquiry Card-Page 17



other outstanding \*ESSEX ENGINEERED production proven products



A.C. or D.C. General Purpose Multipole relays. For circuit switching of electrical inter-locking remote control devices. Features special cross-bar contacts for low-voltage, low current circuits or button type contacts for power switching circuits. Request Bulletin No. 1060.

R-B-M "Control" Division Logansport, Indiana



A full "Extra Test®" line of lead, appliance, automotive and refrigeration wires, plus submersible pump cable and 200° C. Sil-X<sup>®</sup> insulations are examples of the versatility of "Essex Engineering"

> Wire and Cable Division Fort Wayne, Indiana



CORD SET DESIGN AID

The CORDINATOR®, a time-saving engineering tool, features simplified charts showing approved wire by product types. Dial side permits visual fabrication of cord sets and power supply cords. All components standard approved . . . minimizing cost . . . assuring scheduled delivery. Write for your free CORDINATOR.

Cords Limited Division DeKalb, Illinois





ALLMETAL
HAS THE LARGEST
STOCK OF
STAINLESS STEEL
FASTENERS
IN THE WORLD

- Allmetal specializes in all types of stainless steel fasteners; screws, nuts, bolts, washers, rivets, pins, 'AN' fasteners, etc.
- Batteries of cold headers and automatic screw machines ready to turn out special fasteners to your specifications.
- Now! Sales offices in the East, Midwest and West for fast local service direct from the manufacturer.
- Call the Allmetal office nearest you you can receive the fasteners you need the very next day.

Send now for your copy of Allmetal's 52 page stainless steel fastener stock list and data book

## ALLMETAL SCREW PRODUCTS COMPANY, INC.

821 Stewart Avenue, Garden City, New York Ploneer 1-1200

## MIDWEST DIVISION

5611 West Lake Street, Chicago 44, Illinois EStebrook 9-1700

#### **WEST COAST DIVISION**

2978 Wilshire Boulevard, Los Angeles 5, California DUnkirk 5-6357

manufacturers of stainless steel fasteners

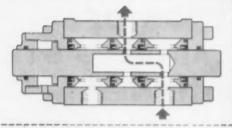
# WHO says all control valves are pretty much alike?

This exclusive patented\*

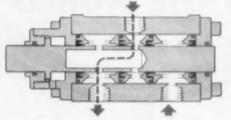
Quick-As-Wink®

construction

Plunger Right. Air flows through the inlet—and the hollow, polished stainless steel plunger—and out to the air aperated device.



Plunger Left, Inlet air is blacked off. Air from the air operated device is exhausted through the hollow plunger, and out the exhaust connection.



## assures users unparalleled efficiency, economy, dependability and satisfaction

Quick-As-Wink Control Valves are in a class by themselves! Our exclusive patented\* valve chamber construction, that accurately positions the "O" rings and the "U" packers without mechanical pressure, meets the most exacting service requirements. No direct flow across the packings, greatly prolonging their life. No lapped joints. No metal to metal seating. Hundreds of different types and actions. Sizes from ¼" to 4". Get full details.

\*U. S. Pat. No. 2,645,450

Write for BULLETIN NO. 571 Today! =

# Gontrol Valves



Mfd. by C. B. HUNT & SON, INC., 2125 East Pershing St., Salem, Ohio
— Engineering and Sales Representatives in the Principal Cities —

For More Information Circle No. 316 on Inquiry Card-Page 17

new products

> Miniaturized Transformers for Printed Boards



Stromberg - Carlson, Rochester 3, N.Y. is producing miniaturized transformers for handling a wide range of audio and carrier frequencies. Their core structures are nickel iron laminations for the audio frequency units and ferrite for those in the carrier frequency range. Windings are of polyurethane insulated copper wire and are separated by Mylar. Cases are made of injection molded phenolic in two sizes: 1-1/16" x 3/4" x  $^{3}\!\!/\!_{4}{}^{\prime\prime}$  and 1-1/16" x 15/16" x 1½". They stand up under extreme humidity and temperature conditions.

Circle No. 63 on Inquiry Card-Page 17

## 14" Light Beam Provides Longer Building Spans

A lightweight structural 14" beam with a 4" flange and weighing only 17.2 lb per ft is being marketed by Jones & Laughlin Steel Corp., 3 Gateway Center, Pittsburgh 30, Pa. It extends the range of sections in designing industrial and other buildings. Because of its depth, the beam provides longer spans with less deflections than other sections of equivalent strength. Its four-inch flange is wide enough for bolts or rivets and will provide ample bearing for precast slab construction. The beams are ideal sections for roof purlins, floor joists and spandrel beams.

Circle No. 64 on Inquiry Card-Page 17

in buying equipment, consider...



Motors



Pumps



Drives



Control

## **LOW** lifetime cost

The cost of equipment you buy does not end with purchase price. Cost stretches over the entire lifetime of your purchases. It goes up with every shutdown, every maintenance stoppage. Cost stays down when you buy quality. And quality means Allis-Chalmers.

Something extra goes into the full line of Allis-Chalmers control, motors, pumps, and *Texrope* drive equipment. We call it "quality-craftsmanship." It means long-run dependability; it means the real cost of A-C products stays low.

**Find out more** from your A-C district office or distributor, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin.



ALLIS-CHALMERS



## PRE-CUT, PACKAGED CHAIN

## FEATURED "FIRSTS" OF THIS NEW CAMPBELL CHAIN

- Pre-Cut to eliminate measuring and cutting
- e Pre-Packed for easy handing and quick inventory
- Clean—no dirty hands or
   tathing
- Labeled for instant identification of grade and size
- e"Measure-Mark" marked every 5' and color-coded in the 50' and 100' lengths

CHAIN

- 3/16", 1/4", 5/16", 3/8" Proof Coil
   Chain . . . in lengths of 10', 15', 20',
   50' and 100' . . . in attractive easy-to-handle packages.
- Instantly identified by the rich blue color...tempered right into the chain.

The newest, surest, most convenient way to buy chain. When it's "Blue Temper" Proof Coil . . . you know it's easy to store . . . accurately cut . . . easy to handle. And you can be "Brand-Sure" when you see the Campbell Chain blue!

Get complete information from your Campbell distributor or write direct.

Pre-Cut, Packaged Chain also available in Hot Galvanized

CAMPBELL CHAIN Company

York, Pa.—W. Burlington, lowa Portland, Ore.—Sacramento, Calif.—E. Cambridge, Mass. Makers of the famous Lug Reinforced Tire Chains

For Mare Information Circle No. 318 on Inquiry Card-Page 17



PVC Strainer Handles Corrosive Materials



The first all-plastic Y-sediment strainer has just been placed on the market. The new strainer is made of highly corrosion-resistant rigid polyvinyl chloride, and is designed for service on alkalis, acids, inorganic salt solutions and other corrosive materials. It uses rigid PVC sheet with 1/32" holes. The open area of the perforated screen is at least twice the cross sectional area of corresponding Schedule 80 pipe, thus assuring adequate flow. It has a service rating of 150 psi at 75 F and 75 psi at 150 F. Walworth Co., 60 E. 42nd St., New York 17, N.Y. is the manufacturer.

Circle No. 65 on Inquiry Card-Page 17

#### Teflon Tape Adheres Without Fasteners

A full line of cementable Teflon tape and sheet has been announced by Chicago Gasket Co., Dept. A-3D, 1271 W. North Ave., Chicago 22, Ill. The Teflon has been treated on one side so that it can be adhered to a variety of surfaces without the use of mechanical fasteners. It is claimed that this material permits the use of more economical gages of Teflon, without sacrificing any of its physical or chemical properties. A variety of special adhesives are available for use with this cementable Teflon. These include a hard bonding permanent cement as well as peelable adhesives.

Circle No. 66 on Inquiry Card-Page 17



## Alcoa eliminates blind bids on aluminum parts

A bid from Alcoa can be a safety check on all your other suppliers. Suppose you are getting bids on a part to be die cast in aluminum. Get one from Alcoa, too.

We don't say we'll always be the cheapest. (Though we often are.) Nor will we always be the fastest. (Though we amaze ourselves.) The point is that we may not bid the job as a die casting at all.

We may find your part can be more economically impact extruded. Or cast in plaster. Or forged. Or turned on a screw machine. Alcoa is in the unique position of providing all aluminum fabricating processes. We can be completely unbiased in our bids.

Any bid that doesn't explore all ways of making your part is a blind bid. Don't let blind bids cost you money when it is so easy to send a print to Alcoa. Just look for your Alcoa sales engineer listed under "Aluminum" in your classified phone book. Aluminum Company of America, 1995-M Alcoa Building, Pittsburgh 19, Pa.





NEW! "ALCOA THEATRE"

Mail this coupon for quick information on any of these Alcoa fabricating services

Gentlemen

We are interested in your aluminum fabricating facilities checked at right.

TITLE COMPANY

ADDRESS

die casting sand casting

plaster casting

permanent-mold casting

extrusion impact extrusion of forging

drawn tube special mill shapes and blanks

[ finishing screw machine capacity

press and shear capacity

iob welding torming and stamping

spinning riveted and welded

For More Information Circle No. 319 on Inquiry Card-Page 17

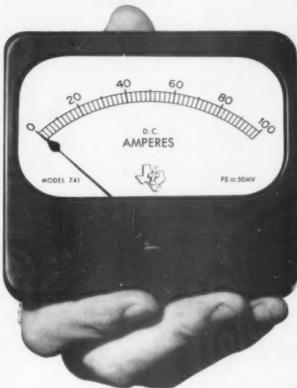




## BAY STATE ABRASIVES

Bay State Abrasive Products Co., Westboro, Massachusetts. Branch Offices and Warehouses: Bristol, Conn., Chicago, Cleveland, Detroit, Pittsburgh. In Canada: Bay State Abrasive Products Co. Ltd., Brantford, Ontario. Distributors: All principal cities.

# for your panel instruments depend on texas instruments



Get immediate prototype delivery of Tl panel instruments . . . built to exceed MIL-M-6A or MIL-M-10304A with accuracies within 2% or less over full scale deflection and fill your panel instrument needs now!



FOR THE INDUSTRY'S

# FASTEST **DELIVERY!**

movement - ac, dc, thermocouple, rectifier. elapsed time, vu. db

enclosure - molded phenolic case, hermetically sealed metal case, hermetically sealed ruggedized metal case



select from a wide choice style - front-of-board, semi-flush, flush size (inches) —  $1\frac{1}{2}$ ,  $2\frac{1}{2}$ , 3,  $3\frac{1}{2}$ ,  $4\frac{1}{4}$ ,  $4\frac{1}{2}$ 

shape - square, rectangular, round, fan

special - modification to your specifications

For rapid delivery of panel instruments . . . depend on Texas Instruments

WRITE FOR BULLETIN NO. DL-C 631



EXAS INSTRUMENTS

For More Information Circle No. 321 on Inquiry Card-Page 17

### dependable cutting

## ... WITH LENOX BAND SAW BLADES

Tough flame-hardened teeth, uniformly set to a tolerance of .001", retain their razor-sharp edges even under strenuous cutting conditions.

Produced under exacting quality control and modern machining techniques, LENOX band saw blades perform consistently and accurately on all types of machines.

Engineering and research facilities are at your service for the solutions to your cutting problems and production questions. Call or write today for full information.



AMERICAN SAW & MFG. COMPANY SPRINGFIELD . MASSACHUSETTS . U. S. A.



### Nylon-Insert Locknut Firmly Anchors Collar



Gries Reproducer Corp., 400 Beechwood Ave., New Rochelle, N.Y., is producing a line of nylon insert locknuts with a die-cast zinc alloy hex nut body and a molded nylon compression collar for its locking element. The locknut is made by a special manufacturing technique which firmly anchors the unthreaded nylon collar in the nut body so as to positively prevent the collar from turning or breaking out. The nylon locking element maintains a constant grip on the screw threads, dampens vibration and resists loosening. Thread sizes range from #4 to 1/2".

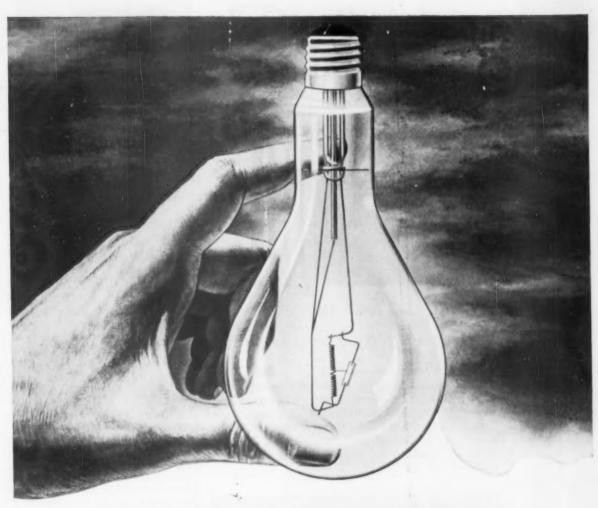
Circle No. 67 on Inquiry Card-Page 17

### Heating Element Handles 2800 F Jobs

A new and improved silicon carbide heating element has been developed by the Globar Division of the Carborundum Co., Niagara Falls, N. Y., for periodic or continuous applications requiring temperatures up to 2800 degrees F. All silicon carbide heating elements increase in resistance with use. This particular element, however, builds up resistance at a very gradual and uniform rate, which results in longer element service, more uniform product quality, and greater continuity of production. The low-resistance terminals provide trouble-free connections.

Circle No. 68 on Inquiry Card-Page 17

For More Information Circle No. 322 ←on Inquiry Card—Page 17



### Newest Sylvania design for filaments brings you up to 8% more light at <u>no</u> increase in cost

On the surface, it's the same lamp you've always bought . . . same shape . . . same wattage . . . same price. But, inside the new 120-volt Sylvania coiled coil-filament lamp you'll find the new twist that offers you up to \mathbb{8}% more light—up to 17% more light over the life of the lamp—at no price increase over standard lamps.

### MORE COMPACT FILAMENT

Secret of this new output is the axially mounted coiled coil which incorporates the same length of tungsten wire as standard filaments in a coil that's considerably shorter. This compact filament conserves light by reducing heat dissipation—reduces bulb blackening.

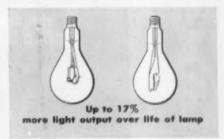
### REDUCES BULB SIZES

Sylvania's newest filaments have permitted a slight reduction in bulb size in two important wattages. The new 500-watt and 300-watt lamps have been reduced in size as much as 16%.

For details on this new lighting bargain from Sylvania, contact your Sylvania supplier or write:

SYLVANIA ELECTRIC PRODUCTS INC. Lighting Division, Dept. 7L-4512 60 Boston Street, Salem, Mass.

In Canada: Sylvania Electric (Canada) Ltd.
Shell Tower Building, Montreal



### HERE'S ONE REASON WHY

Old-style filament evaporates tungsten over a wide area, blackening a large portion of bulb. New coiled coil reduces filament area, decreasing heat loss and localizing blackening effect.

SYLVANIA ... fastest growing name in sight!

LIGHTING . RADIO . ELECTRONICS . TELEVISION . METALS & CHEMICALS

For More Information Circle No. 323 on Inquiry Card-Page 17

DECEMBER, 1957

179



### "All he did was suggest Chicago-Latrobe Gun Drills..."

More than one production man has pulled his shop out of a tough spot by discovering that Chicago-Latrobe gun drills offered a new and practical way to do certain difficult drilling jobs. Consult your Chicago-Latrobe distributor. He's had wide experience in this specialized field, and he has a C-L Service Engineer available to him who rates as the final authority on gun drilling.



DRILLS . REAMERS . CARBIDE TOOLS . COUNTERSINKS . COUNTERBORES . SPECIAL TOOLS



### CHICAGO · LATROBE

412 W. ONTARIO STREET . CHICAGO 10, ILLINOIS

OFFICES AND WAREHOUSES

NEW YORK · DETROIT · CHICAGO · LOS ANGELES

For More Information Circle No. 324 on Inquiry Card-Page 17

# new products

### **Glide-Action Lighting Unit**



A lighting unit that glides and rotates readily into any one of a thousand different working positions is the recent development of Amplex Corp., 111 Water Street, Brooklyn 1, New York. Appropriately named the "Trombolite", the new unit features, in addition to its unique light-positioning methods, a combination of incandescent-fluorescent lighting said to provide highly improved illumination over working areas. The Trombolite's applications include lighting for draftsmen, engineers, architects, artists, jewelers, and examining for physicians and dentists.

Circle No. 69 on Inquiry Card-Page 17

### Napthenic Type Oil Stops Rubber Staining

A pale, non-volatile naphthenic type oil has been specifically developed for use as an oil extender in the manufacture of extremely light colored butadiene - styrene polymers. The product, Circosol NS, combines excellent non-staining and color stability in the finished rubber product with the good overall processing qualities associated with naphthenic oils. According to the manufacturer, Sun Oil Co., 1608 Walnut St., Philadelphia 3, Pa., it can be used to extend butadiene-styrene polymers 1703, 1707, and 1708 for light colored manufactured products.

Circle No. 70 on Inquiry Card-Page 17

For More Information Circle No. 325 on Inquiry Card—Page 17-> PURCHASING



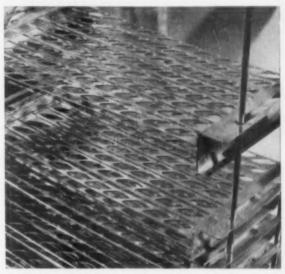
For High Temperatures. This recuper ator is used on industrial furnaces. It uses waste flue gas to heat the incoming furnace air and thereby increase the efficiency of the furnace. Formerly, these recuperators were made with ceramic tubes, but heat transfer was low and leakage was high. The Hazen Engineering Company in Pittsburgh makes recuperators almost completely from Stainless Steel. Compared to ceramic designs, the Stainless design saves about 40% in fuel, increases furnace output about 10%-15%. The Stainless Steel performs well, even at this 1800-2300° F. temperature range.

For Corrosion Resistance. The Hercules Powder Company needed an ammonium nitrate storage tank for their plant near Richmond, California. They took an old, World War I concrete reservoir and lined it with Type 304 USS Stainless Steel. The 14-gage sheets are laced with 18,000 feet of vacuum-tested welds. Tank holds two million gallons of solution, and is 200 feet in diameter at the top. U. S. Steel's Consolidated Western Division handled the complete installation.

### NOTHING can equal Stainless Steel

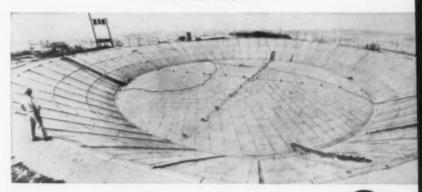
in its unique combination of properties

No other design material can match Stainless Steel in its combination of desirable properties: corrosion resistance, strength, hardness, beauty, cleanability and easy fabrication. For a reliable source of supply, United States Steel offers you the widest range of types, finishes and sizes. Just call your steel warehouse.



For Cleanliness. When you work near nuclear radiation areas, you wear a small badge containing X-ray film that records how much radiation you have received. The film, "photodosimetric film," is developed in a Sensitometric Processing Unit made by Bar-Ray Products, Inc., in Brooklyn. The unit, including the trays shown here, is made completely from 18-gage Type 316 Stainless Steel because it resists corrosion, is easy to clean, has a hard, dense surface that doesn't harbor dirt.

United States Steet Corporation, Pittsburgh - American Steel & Wice Division, Cleveland Columbia-Geneva Steel Division, See Francisco - Rational Table Division, Pittsburgh Tennessee Coel & Iron Division, Fairfield, Ala. United States Steel Supply Division, Warehouse Distributors United States Steel Supply Division, Warehouse Distributors United States Steel Europ Company, New York

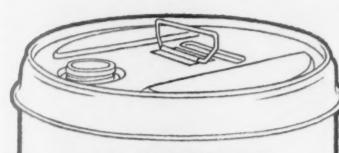


USS STAINLESS STEEL

SHEETS . STRIP . PLATES . BARS . BILLETS . PIPE . TUBES . WIRE . SPECIAL SECTIONS



# \*\* STAR SERVICE makes Continental Steel Containers your best buy



# ICC-APPROVED TIGHT-HEAD PAILS

Capacity 5 gallons. Made from heavy 24- or 26-gauge steel. Meets ICC specifications 17E and 37D. High-strength body available with straight sides or top and bottom beads. Drum top offset for easy stacking. Electric lap-weld side seam, and compound-lined, double-seamed head and bottom.

For full specifications on all Continental steel containers, contact your nearest Continental representative. When you purchase steel containers, get the most for your money. This means the best in service as well as the best in pails and utility cans. At Continental, we go all out to give you what you're looking for—with our 4-star steel container service.

### FULL LINE

Whatever product you're buying for, Continental has just the size and style container to fit it. Handi-Cans in 2½ and 5 gal. sizes, lug cover pails from 2 to 12 gal., flaring pails from 3½ to 6½ gal., plus 5 and 6 gal. tight-head pails.

### A QUALITY

Made of heavy-gauge steel in ultra-modern plants, Continental steel containers are thoroughly tested to meet ICC specifications and to conform to CFC/UFC Rule 40. Colorfully lithographed, these sturdy, reusable containers will continue to promote your product long after their original contents have been emptied.

### RESEARCH

As part of our 4-star service, customer research men are available to help you right in your own plant. In addition, scientists at our Research and Development Center in Chicago are constantly working to bring you new and better packaging ideas—such as Continental's Perma-Linings for hard-to-hold products.

### A QUICK DELIVERY

Just say the word and we'll deliver all the steel containers you can use—any time, any place. Continental's excellent production facilities and carefully selected warehouse points in many sections of the country guarantee better service when and where you need it.

So get full value from your purchasing dollar—with Continental's 4-star steel container service. Call anytime.



Eastern Division: 100 E. 42nd St., New York 17 Central Division: 135 So. La Salle St., Chicago 3 Pacific Division: Russ Building, San Francisco 4

For More Information Circle No. 326 on Inquiry Card—Page 17 182 For More Information Circle No. 327 on Inquiry Cord—Page 17→
PURCHASING



NEW GENERAL ELECTRIC DC MOTOR HAS

### Coils Encapsulated for Longer Life

RINAMATIC ... a new standard in industrial direct-current motors ... designed to give extra dependability to automated production systems.

Encapsulated Field Coils . . . insulated with mica and glass and permanently sealed against moisture and corrosive airborne materials . . . virtually eliminates insulation as an element in motor life and adds a reliability factor

never before available in a standard direct-current motor.

Greater Versatility . . . a 15% service factor now available in the standard, dripproof d-c Kinamatic motor means user can: 1) obtain 15% more than rated power for normal life of motor; 2) obtain 100% longer motor life at rated power; or, 3) obtain greater versatility on speed and horsepower duty cycles.

Additional information is available at your nearest General Electric Apparatus Sales Office. Or, write for Bulletin GEA-6355. Direct Current Motor and Generator Department, General Electric Company, Erie, Pennsylvania.

\*Trade Mark of General Electric Company.

815-12

Progress Is Our Most Important Product

GENERAL 🚳 ELECTRIC

### SPRING PURCHASING

made easier...



The Spring Division of John Chatillon & Sons is set up to make your job easier.

Coordination between the Chatillon Sales Department and their Spring Engineers makes it possible for you to receive your spring requirements with a minimum of delay.

For unexcelled spring service, send your blueprints to John Chatillon & Sons for study and recommendation. We manufacture all types of springs, utilizing all spring metals and alloys, at competitive prices. Write to Department P-4.



85 CLIFF STREET, NEW YORK, N. Y.

Manufacturers of Precision Springs and Force Measuring Instruments Since 1835.

For More Information Circle No. 328 on Inquiry Card—Page 17

# new products

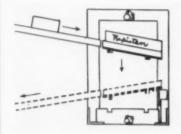
### Molded Case Circuit Breakers Installed Fast



A line of AB circuit breakers has been compactly designed to provide increased electrical capacity. The new design also contributes to a substantial saving of time in many installations. This makes these breakers particularly well suited to a wide range of distribution systems, including those utilizing 480 v service. They are available in two models: 3-pole 480 v, type NEF, with ratings of 15 to 100 amp and capable of withstanding short circuits, of 10,000 amp; single pole 120 v, type NEW, in ratings of 15 and 20 amp. Federal Pacific Electric Co., 50 Paris St., Newark 1, N.J. is the manufacturer.

Circle No. 71 on Inquiry Card-Page 17

### Vertical Transfer Unit Reverses Conveyor Flow



Operating as a self-supported, automatic unit, a vertical transfer unit changes the direction of material flow on a conveyor system, without use of 180° curved conveyor sections. It can operate in areas where space limitations previously prevented using conveyor. Cartons from the upper conveyor track flow by gravity onto a lift platform, activating a switch and causing the platform to descend to a lower level. The platform tilts at the lower level, discharging cartons onto the lower conveyor track leading away in the opposite direction. The platform automatically returns to the upper level when the cartons have been cleared. The unit is a product of The Rapids-Standard Co., Inc., Grand Rapids, Mich.

Circle No. 72 on Inquiry Card-Page 17

### Pump Handles Liquids Up To 2000°F



A high temperature, air-driven, alloy pump is available for fast, efficient handling of molten salt and other hot liquids up to 2000 F. The pump is fabricated from a limited number of sturdy heatresisting alloy parts and is driven by a self-cooling, stall-proof motor. Using an air supply of 90 psi, the pump handles 600 lb of molten salt a minute; with 60 psi supply, 450 lb a minute. Since the pump is air driven, the volume can be reduced as desired by adjusting the air intake valve. The manufacturer is Ajax Electric Co., Dept. NP-4, Frankford & Delaware Aves., Philadelphia 23,

Circle No. 73 on Inquiry Card-Page 17

### SEE PAGE 17 FOR INQUIRY CARD

For More Information Circle No. 329 on Inquiry Card—Page 17-> PURCHASING

### 39 Sources

LOCATED FOR FAST, CONVENIENT SERVICE

AMERICAN SCREW COMPANY

THE BLAKE & JOHNSON CO. BUTCHER & HART MFG. CO. CANADA ILLINOIS TOOLS LTD. Toronto, Ont., Canada CENTRAL SCREW COMPANY CLEVELAND CAP SCREW CO. CONNECTICUT SCREW & RIVET CO., INC. CONTINENTAL SCREW CO. New Bedford, Massachusetts ECONOMY SCREW CORP. Chicago 14, Illinois ELCO TOOL & SCREW CORPORATION \_Rocklard, Illinois FEDERAL SCREW WORKS Detroit 10, Michigan GREAT LAKES SCREW CORPORATION Chicago 27, Illinois H. M. HARPER CO. HARVEY HUBBELL INC. port 2. Connecticut INDIANA METAL PRODUCTS DIVISION, Rochester, Indiana LAKE ERIE SCREW CORP. \_Cleveland 7, Ohio THE LAMSON & SESSIONS CO. \_Cleveland 2, Ohio MIDLAND SCREW CORP. \_Chicago 32, Illinois THE NATIONAL SCREW & MFG. CO.

Cleveland 4, Ohio

Los Angeles 22, California NATIONAL LOCK COMPANY PARKER-KALON DIVISION, GENERAL AMERICAN TRANSPORTATION CORP. PHEOLL MANUFACTURING CO. Clifton, New Jersey PITTSBURGH SCREW & BOLT CORP.

Pittsburgh 33, Pennsylvania PROGRESSIVE MANUFACTURING CO., DIV. OF TORRINGTON CO. \_Torrington, Connecticut RELIANCE DIVISION, EATON MANUFACTURING CO. REPUBLIC STEEL CORP. & Nut Division, Cleveland 13, Ohio RING SCREW WORKS \_Van Dyke, Michigan P. L. ROBERTSON MFG. CO., LTD. Ailton, Ont., Canada ROCKFORD SCREW PRODUCTS CO. RUSSELL, BURDSALL & WARD BOLT & NUT CO. Port Chester, New York
Los Angeles 33, California SCOVILL MANUFACTURING CO. Waterville 48, Connecticut SEMS DIVISION, TEXTRON INC.

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### pre-assembly

speeds assembly to cut fastening costs

Pre-assembled Sems are a first step in cost saving automation. Often hopper fed in automatic driving, Sems save washer handling motions however used. Washers can't get lost, are never forgotten, can not be mis-matched to screw. Rejects are stopped, faster assembly given the go-ahead. Order Sems in the type and size you need.

Sems

pre-assembled screw and lock washer



Sems is a development of Illinois Tool Works, Chicago

### 1957 National Business Show



THE 1957 National Business Show, presented by the Office Executive Association, brought to the New York Coliseum the largest and most complete collection of the newest in office equip-

From duplicating machines to desks, from dictation machines to furniture, from chairs to safes, this year's display provided the purchasing agent with a wide variety of equipment from which to make his selections. Over 300 manufacturers had their wares on exhibit in tastefully decorated and designed booths.

A feature of the show was a

Howard Sloane (left), managing director of the New York Coliseum presents "V.I.P. Award" of the Coliseum, a foot-long cigarette lighter to Assistant Secretary of Commerce. Frederick H. Mueller at the opening of the 1957 National Business Show. Looking on is Rudolph Lang, managing director of the National Business Show.

The National Business Show, largest of its kind in the world, broke many attendance records when it attracted more than 150,000



An outstanding feature of the show was the "Management Center" staffed by experts in various fields. The moderator received questions from visitors and passed them on to be answered by one of the experts on the panel. The panel members served for a half-day each, giving the "Management Center" a broad range of experience.

presentation of the latest in automated equipment for scientific office management. Electronic data processing equipment, computers and high speed calculators are just a few of these items developed to meet the needs of modern businessmen.

Some of the new office equipment introduced or announced at the show is presented in these pages. For additional information on any of these developments, circle the appropriate number or numbers on the Reader Service Card in this issue and drop the postcard in the mail. Complete facts and figures will be forwarded to you at once.





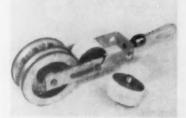






DECEMBER, 1957

# office equipment



The Pannier Single Wheel Code Printer was designed by Pannier Corporation, Pittsburgh, Pennsylvania for hand operation or for mounting on a continuous conveyor line. Clean, clear marking is assured on any surface, absorbent or non-absorbent. Friction bands on the printing wheel minimize any possibility of smudged impressions. Equipped with a foam rubber ink foundation, it is engineered for easy and quick changing to permit the using of extra fountains with different colored inks.

Circle No. 75 on Inquiry Card-Page 17



A completely new, portable Form Flow Register has been introduced by The Standard Register Company, Dayton, Ohio. Available in three sizes, accommodating the three popular form dimensions, it comes in a choice of six modern colors. Incorporating an easily accessible storage compartment that holds a generous supply of multi-copy forms, the register will easily handle up to six-part sets, including forms held together with staples.

Circle No. 76 on Inquiry Card-Page 17



The Copycat Corp., of New York City has introduced a machine they claim will accelerate office automation. The new machine is the first to apply the photo-copy technique to a system of low cost, high speed quantity reproduction of all typed, written, and printed material. A compact unit, measuring 51/2 inches wide and 4 feet 8 inches high, the Copycat "500" combines perforated film and transparent masters with dyeline printing. It takes a translucent master, made from the original, and, according to the setting of a calibrated dial, provides up to 1000 copies an hour. The unusual speed is partly the result of printing on a continuous role of sensitized paper. The machine cuts the paper into sheets of a specified size that is pre-determined by the operator, and ranges from 6 inches to 14 inches in length. Each sheet is automatically stacked in a receiving tray, ready for immediate use. By completely machine handling the job, the "500" eliminates the time and money usually spent on such things as collating, setting-up, accuracy checks, carbons, inks, and spirit solutions.

Circle No. 77 on Inquiry Card-Page 17



An all-electric adding machine no bigger than a telephone has been introduced by the Underwood Corporation, New York 16, N. Y. Weighing a mere seven pounds five ounces and standing just five inches high, the compact adding machine features the natural sequence ten-key keyboard. The versatile Add-Mate, adds, subtracts, multiplies, repeats, corrects, totals and sub-totals, all electrically. It can be used for payrolls, inventories, bank statements, daily totals, invoice checking, and many other applications. Circle No. 78 on Inquiry Cord—Page 17



A new desk-top office machine that protects and preserves important business papers is now available. The machine, known as the Apeco "Ply-On" Laminator, completely encases either or both sides of an original copy with thin, pliable sheets of transparent cellulose triacetate plastic film. The full operation takes less than 10 seconds. A lettersize original can be laminated for five cents, one side for two and one-half cents.

Produced by the American Photocopy Equipment Company, Chicago the new development is the first laminator designed to be used in business offices.

The plastic coating is impervious to moisture, retains its clarity with age, will not crack when folded, and resists most liquids and solvents. Occupying only 101/2 x 15 inches of table space and weighing less than 30 pounds, the Laminator is activated either by push button or foot pedal. It operates on either continuous or single feed, and automatically laminates merely by guiding the original copy into the feeding slot where the plastic film and the original contact the heated rollers and the laminated original emerges from the rear.

Circle No. 79 on Inquiry Card-Page 17





Letter perfect! There's nothing like M & V typewriter ribbons and carbon paper for clean, sharp originals and legible, smudge-free copies. That goes for Tagger, Silk Spun, M & M and Plenty Copy . . . ribbons and carbon paper matched to each other—and unmatched by any

other—for superior work! M & V's been making good impressions for 75 years . . . why not let them make some for you? Your stationer can tell you which of these smartly packaged products is right for your job. Call him today, or write Dealer Sales Department.

BURROUGHS DIVISION, BURROUGHS CORPORATION, DETROIT 32, MICHIGAN

For More Information Circle No. 330 on Inquiry Card-Page 17



office equipment



A new product, the Documat, is being marketed by Documat, Inc., Belmont, Mass. The machine, a 16 mm. microfilm flow camera which can record as many as 7200 letter-size documents on a single roll of film, can also film both sides of a single sheet at one time. Conceived as a practical and economical operation for smaller offices with an occasional use of this method, the Documat has finger-tip controls, flash signals and other automatic aids. Anyone can run off and record letters and pamphlets up to 1/4 inch thick, while stapled, clipped and pinned sheets will also feed through without jamming.

Circle No. 80 on Inquiry Card-Page 17



Spirit duplicator operators no longer must cope with the problem of spreading hectograph dyes when using the new Transograph Process developed by Columbia Ribbon & Carbon Mfg. Co., Inc., Glen Cove, New York. The Transograph Process is a spirit dupli-

cating process which relies upon a chemical reaction to form a substantially lightfast and waterfast duplicated image. It will allow tabulating installations to take advantage of the simplicity and efficiency of the spirit duplicating process by completely eliminating the use of hectograph dyes. Transograph sets may be used in continuous form on any tabulator with freedom from dirt and dye stains. The unit is clean from its preparation to its duplication, and stays clean for troublefree filling. No new training is required, as the method of duplicating is basically the same as regular hectograph. All existing spirit type duplicators may be used without additional parts or modifications.

Circle No. 81 on Inquiry Card-Page 17



A new line of office collators manufactured by Thomas Collators Inc., New York, is having its initial exhibition. The machines are available in both mechanical and electric powered models, with collating capacities ranging from 8 to 32 sheets. By means of a visible bearing-mounted dial with the setting calibrated to correspond to the length of paper to be collated, the collator can handle paper from five to seventeen inch lengths. All models are equipped with modern burred feed rollers, making possible the collation of paper weights and finishes ranging from tissue and onionskin to 1/8 inch cardboard. A single push-pull knob alongside the paper bins lifts all feed arms simultaneously for ease in loading the machine, and a control dial provides fingertip adjustment of the stroke length of the arms on the electric models.

Circle No. 82 on Inquiry Card-Page 17

For More Information Circle No. 331



# **MULTIPLE COPIES WITHOUT CARBONS**

### It's done with NCR PAPER!...up to eight legible copies

Your business forms can now be produced in multiple copies without the use of carbon paper or even carbonization. Yes, thanks to the research laboratories of The National Cash Register Company, an amazing paper has been perfected that makes perfect copies of requisitions, invoices, sales slips or any of hundreds of business applications where clear, clean copies are required.

Up to five legible copies can be made on NCR Paper with a standard typewriter, ball-point pen or pencil and eight or more with a business machine or electric typewriter. Because it requires no carbon inserts, NCR Paper is a great time-saver and smudging of copies and fingers is eliminated.

It's so simple to use too. Just put together several forms that have been printed on NCR Paper-insert them in a business machine or typewriter and the copies come out clear, clean and easy to read.

Your forms can be printed on NCR Paper by your present forms supplier. The cost is much lower than you think and you'll be pleased by the way NCR Paper produces clearer, cleaner copies. Phone your supplier today and ask about getting your forms printed on NCR Paper.

NCR PAPER AND SUPPLIES

ACCOUNTING MACHINES

ADDING MACHINES . CASH REGISTERS

ANOTHER PRODUCT OF

THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio 989 OFFICES IN 84 COUNTRIES



CARTER L. BURGESS: "The world of modern business moves swiftly. Yet every step must first be planned, then recorded, on paper. In a variety of uses, quality papers are the very foundation of business as we know it today." "Mr. Burgess is President of Trans World Airlines.

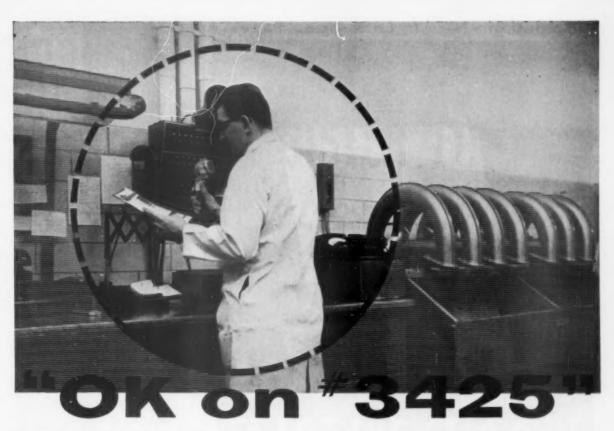
### Better papers are made with Cotton Fiber\*

You can be sure of greater beauty, strength, permanence and all-around performance when you use cotton fiber papers. This has been true for generations. The premium qualities these papers possess come from the tough, flexible fiber that goes into them, and the highly specialized equipment and processes used in crafting them. So, don't just buy paper—buy value. Specify cotton fiber papers.

YOUR SUPPLIER KNOWS... why papers made of cotton fiber (25% minimum to 100% in the best grades) perform better in a variety of uses. Ask him about cotton fiber business and social stationery, indexes, ledgers, onion skin, drawing, tracing, blue print and other papers.



\*LOOK FOR "COTTON" OR "RAG" IN THE WATERMARK OR LABEL



### How the world's fastest Diazo Testing System produces better whiteprints

How do you go about testing whiteprint papers in seconds at every stage of manufacture?

At Ozalid we solved the problem by designing and building the industry's fastest and most effective quality testing system.

Here's how it works: right on the production floor, testers tear off samples of newly coated paper at predetermined points in the roll. These are sent through a network of high-speed pneumatic tubes to the Central Quality Control Laboratory.

There, the sample is tested under shop conditions similar to yours. By intercom, word is flashed back to continue, modify or stop production. Total elapsed time: 90 seconds!

By testing so speedily, we're able to check more often. As a result, you get clearer, more uniform prints with no variation from sheet to sheet.

But why not test-run Ozalid papers yourself? Simply call your local Ozalid representative, or write Ozalid, Dept. L-12, Johnson City, N. Y.



# OZALID® papers

for consistently finer prints

A Division of General Aniline & Film Corporation, Johnson City, N. Y. In Canada: Hughes Owens Company, Ltd., Montreal.

### Something New In Letterhead Paper





Here's the ideal paper for sales letterheads, announcements, notices... for any application that will benefit from added interest and attention. Weston's HAND WEAVE is now offered in both laid and wove finishes featuring a radiant blue-white color made outstandingly bright with fluorescent dye.

Laid finish is also available in four attractive pastel colors: Ivory, Blue, Green and Gray. Matching envelopes in bright white and colors.

Ask your printer to show you samples of this brilliant new letterhead paper . . . or write for the new Weston's HAND WEAVE sample book. Address Dept. PN



### BYRON WESTON COMPANY

Makers of Papers for Business Records Since 1863

DALTON, MASSACHUSETTS

COTTON FIBER BONDS . LEDGERS . MACHINE POSTING LEDGERS . INDEX BRISTOLS

For More Information Circle No. 335 on Inquiry Card—Page 17

# office equipment



Niemann, Inc., Chicago manufacturers of office, institutional and residential furniture, has announced three new sectional groups for offices.

The space-saving, lighter scaling of the new groupings makes them especially suited to today's smaller, more compact office, reception and lobby areas.

Rearrangeable designs help meet the multi-purpose requirements of modern offices, give long-range usefulness in office areas, with movable partitions, subject to future expansion or contraction of space.

Circle No. 83 on Inquiry Card-Page 17



A ten key "personal" calculator, weighing only six pounds, is being introduced by Bohn Duplicator Corporation, New York. Called the Contex, the machine is manually-operated, featuring an actuating bar which is depressed with the palm of the hand. Its overall size is 10 x 7 x 3½ and has a capacity of ten digits entered, eleven obtained.

Circle No. 84 on Inquiry Card-Page 17

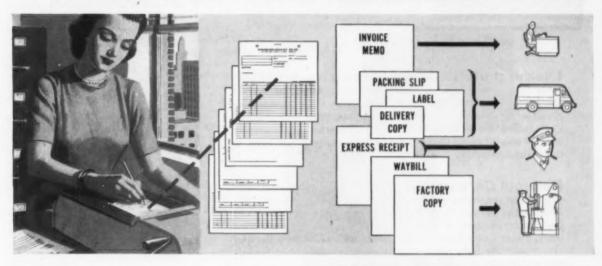
# WRITING TIME CUT 50% WITH A MOORE REGISTER FORM



This manufacturer found efficiency and short cuts in a Shipping System that eliminates peak-load bottlenecks

Once four separate writings had to be made to prepare the Memo Billing and Shipping papers. This was time-consuming and wasteful and there were possibilities for transcribing error. The new Moore system introduced smooth work-flow with other advantages like accuracy, speed, positive control and savings.

### IN ONE WRITING...6 PART REGISTER FORM HANDLES ALL OPERATIONS



The form gives ... in one writing ... all the information or instructions needed for merchandise shipment—Invoice Memo, Packing Slip, Label, and forms for express, parcel post, or truck delivery.

It does every job needed ... even to collecting money on C.O.D. orders. Faster shipments are assured ... no rewriting is required at any time. Consecutive numbering gives positive numerical control throughout.

One writing...on one form...speeds the work. It saves time and reduces errors. Peak shipping period jams have been completely eliminated in Shipping. Writing time saved is 50% of former requirement.

Whatever the need, the Moore man can design the form that makes your system work best. Look him up in the Classified, or write to the nearest Moore office below.

### MOORE BUSINESS FORMS



NIAGARA FALLS, N.Y. . DENTON, TEXAS . EMERYVILLE, CALIFORNIA

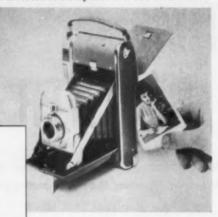
Since 1882 the world's largest manufacturer of business forms and systems.

Over 300 offices and factories across U.S., Canada, Mexico, Caribbean and Central America.

For More Information Circle No. 336 on Inquiry Card-Page 17

Prominent Users of Strathmore Letterhead Papers: No. 131 of a Series

Sixty seconds after the picture is snapped, the Polaroid® Land Camera, Model 80A, has developed a photographic print!



POLAROID CORPORATION

### the image of Quality!

Look at the letterheads that come in your mail. Pick out those that have a rich, attractive texture—a satisfying feel in the hand—an air of quality. Then examine their watermarks. Strathmore? Very likely, because countless firms like Polaroid Corporation use Strathmore Letterhead Papers to make certain that the quality which they achieve in their products is reflected in their correspondence.

Polaroid Corporation introduced its revolutionary concept in picture-taking about a decade ago. In the ensuing years Polaroid has enjoyed the most rapid growth of any organization in the industry, with the number of cameras sold well over the million mark. Today's new Polaroid Land Cameras, coupled with the new highly sensitive Polaroid Land films, make pictures in 60 seconds that are of extraordinarily good quality.

STRATHMORE LETTERHEAD PAPERS: STRATHMORE PARCHMENT, STRATHMORE SCRIPT, THISTLEMARK BOND, ALEXANDRA BRILLIANT, BAY PATH BOND, STRATHMORE WRITING, STRATHMORE BOND, ENVELOPES TO MATCH CONVERTED BY OLD COLONY ENVELOPE CO.

STRATHMORE THIN PAPERS: STRATHMORE PARCHMENT ONION SKIN, STRATHMORE BOND ONION SKIN, STRATHMORE BOND AIR MAIL, STRATHMORE BOND TRANSMASTER, REPLICA

Better Papers are made with Cotton Fiber

# STRATHMORE

MAKERS OF FINE PAPERS

STRATHMORE PAPER COMPANY, WEST SPRINGFIELD, MASSACHUSETTS
For More Information Circle No. 337 on Inquiry Card—Page 17



An auto-feed, inkless duplicator, the Fordigraph 100 is made in such a compact form that it can be as easily carried about as a portable typewriter. In spite of its highly compact design, Fordigraph 100 has all the desirable features of a modern duplicator. It is handled by the Rex-Rotary Distributing Corp., New York 16, N. Y.

Circle No. 85 on Inquiry Card-Page 17



A new portable Addressograph plate embossing machine has been announced by the Addressograph-Multigraph Corporation, Cleveland. The machine is called the Graphotype Class 350 and was created especially for the small volume requirements of small businesses and individual departments of large firms. About the size of a standard office typewriter, the Graphotype is simple to operate, convenient and inexpensive. The company also introduced the Addressograph Class 200 for fast repetitive writing in all clerical operations.

Circle No. 86 on Inquiry Card-Page 17

# How does ESNA's <u>complete</u> line turn your special hex nut requirements into standard parts?









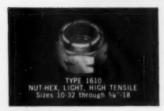


What happens when design or production requires a variation on a standard self-locking hex nut? Can you find a source quickly and economically? You can if you call on ESNA, because ESNA's standard line of hexagon nuts includes hundreds of dimensional, material and tensile variations. Probabilities are that one of them will meet your requirements.

Every nut illustrated here is a standard part. They range in size from a sub-miniature 0-80 thread that is only .107" across the flats to a 4"-4 thread that is 6\%" across. Thread series include SAE, USS and British BSF, BA and Whitworth series. Most are available in carbon steel, stainless, brass, and aluminum. The locking effectiveness of the red locking collar of an Elastic Stop nut has been tested and proved by more than thirty years of actual field service on locomotives, pile drivers, oil drilling machinery and washing machines, truck and tractors. Elastic Stop nuts do not gall or seize bolt threads; they can be re-used many times.

These standard ESNA hex nuts are available from stock or are produced under normal lead times. And, of course, additional hundreds of "specials" are also available. The next time you need either a standard or an unusual hex nut call ESNA, the company that makes the most complete line of self-locking nuts available to American industry.

For details on the Elastic Stop® nuts shown here, write Dept. N43-1215.









### ELASTIC STOP NUT CORPORATION OF AMERICA

2330 Vauxhall Road Union, New Jersey





# Business Stability Developing New England Conference Told

GUARDED OPTIMISM about the business picture for the balance of '57 and all of '58 marked key speeches at the 12th annual New England Purchasing Conference in Boston on October 23. The one-day affair, held at the Hotel Statler, featured an unusually interesting program.

William Pierce of Detroit Edison Company, substituting for Chester Ogden, presented an advance look at the latest survey by the Business Survey Committee of the National Association of Purchasing Agents. (Mr. Ogden is chairman of the committee). He reported that purchasing agents' feelings about the future of business were mixed. "Any general statment as to how our members feel about business would be challenged by many" he said. "Many of our reporting members have lost some of last month's optimism. But some purchasing executives report very optimistically about their present and the future.

D. C. Roscoe, assistant general manager of sales, Bethlehem Steel Company, declared that his company was anticipating that business would continue good for some time to come. He said that the leaps and bounds in the economy we had experienced during recent years could not be expected in the next couple of years. But, he said, business in '58 and '59 should level off at a plateau comparable to the height reached in '57. Steel production, he indicated, would be adjusted accordingly, on a tonnage basis.

Mr. Roscoe reported that there is "an abundance of supply" in most steel items, and stiff competition for the steel users' dollar rules the market. The only exceptions are plates and certain types of large pipe, which should be in better supply by next year.

Other speakers at the confer-





Bill Pierce, pinch hitting for Chet Ogden, uses labels to indicate what he is and is not while explaining how the N.A.P.A. Business Survey works.



# pun Site oo buy the battery that gives you "extra runs" every year.



More Power to you from Gould

Gould application engineers provide you with a continuing service that helps you keep batteries running longer. Try us and see.

Gould-National Batteries, Inc., Trenton 7, N. J.

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Always Use Gould-National Automobile & Truck Batteries

For More Information Circle No. 339 on Inquiry Card-Page 17





THE DRY FLUID DRIVE 100% efficiency at full load!



DODGE-TIMKEN

America's Quality Pillow Blocks!



### SEALED-LIFE V-BELTS

The life is sealed in!

### Write for Bulletins!

- Flexidyne Dry Fluid Drives and Couplings. Bulletin A-640-A.
- Roller Bearings. Load ratings, dimensions, etc. Bulletin A-638.
- Sealed-Life V-Belts. Complete data and sizes. Bulletin A-606-A.

DODGE MANUFACTURING CORPORATION
1300 Union Street • Mishawaka, Indiana



For More Information Circle No. 341 on Inquiry Card—Page 17

# association news

(Continued from page 198)

ence were Thomas W. Seavor, N.A.P.A. vice-president for District 9; Emery N. Cleaves, Celanese Corporation of America, on "Public Relations in Purchasing"; Douglas Dawson, general traffic manager, Morton Company



Vin Goubeau, former president of both the New England Association and the National Association of Purchasing Agents, talks to old and new friends on standardization. Tom Seavor, vice-president for District 9, is at right.



"To ALL from AHL" (G. W. Howard) was the title of the national secretary's talk to the conference.

(whose address appears in this issue on page 81); Gardner A. Caverly, executive vice president, New England Council, on "The New England Council"; and Vincent deP. Goubeau, vice president-materials, Radio Corporation of America, on "Standardization—A New Horizon in Purchasing."

Feature of the afternoon ses-

sion was a panel discussion on "A Personal Experience with Value Analysis." Herbert Layport, Wyman-Gordon Company, presided. Other members were: C. S. Billingham, American Bosch Division; Philip Brown, Hartford Hospital; Herbert R. Hummel, Taco Heaters, Inc.; and Henry A. Tyler, Simplex Wire & Cable Co., Cambridge Mass.

Patrick B. McGinnis, president of the Boston & Maine Railroad, was the luncheon speaker.

Special guests at the convention were top officials of the National Association—Executive Secretary-Treasurer Howard Ahl, and President Robert Shillady. Mr. Ahl spoke at the day session, and Mr. Shillady was principal speaker at the evening banquet.

### New York Group Hears Talk On The P.A.'s Pay

Edmond G. Bradfield, Manager, Classification and Salary Administration, at The Port of New York Authority, spoke on the relationship of the purchasing salary scale to that of sales, engineering and other occupations at the general meeting of the Purchasing Agents Association of New York. Mr. Bradfield discussed objectively the many factors which are evaluated in pricing jobs. He underscored those elements which are given greatest weight in determining professional and management level salaries. Following his presentation, the membership conducted small group discussions aimed at clarifying those elements of the purchasing agents' job which have the greatest importance in advancing his professional status.

Problems in Handling Salesman's Interviews And How You Solve Them was the subject of a discussion held earlier in the day. This important topic was led by a two-man panel: H. W. MacIntosh, Director of Purchases, L. O. Koven & Bro., Inc., and D.T. Keliher, Director of Purchases, United States Metals Refining Company. Forum participants had the opportunity to present their own problems in this area and to exchange experiences with

other members.

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Taper-Lock bushings are available in a range of sizes which makes it easy to change from one size shaft to another. Taper-Lock products slip onto the shaft quickly — hold with the firmness of a shrunk-on fit—come off easily, without shock to bearings or machinery. You'll profit by standardizing on Taper-Lock.

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For More Information Circle No. 342 on Inquiry Card—Page 17 DECEMBER, 1957

For More Information Circle No. 340 on Inquiry Card-Page 17-

201



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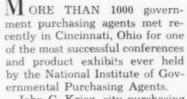
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# 1957 N.I.G.P.

Through the eye of PURCHASING'S Camera



John G. Krieg, city purchasing agent of Cincinnati who was General Conference Chairman and Clarence H. Brunemann, Hamilton County purchasing agent, program committee chairman outdid



Opening day luncheon speaker was Major General William T. Thurman, from the Air Materiel Command.



Work clothes was the big item that attracted all the attention at this booth of A. D. Smith & Co.



They were still talking long after the formal sessions ended.



While the world watched the World Series in New York and Milwaukee, Joseph Spagna, (left) Commissioner of Purchases for New York was meeting Joseph Nicholson, P.A. of Milwaukee in Cincinnati, Ohio



Foster Cole (center) of Miami University, Oxford, Ohio gets the lowdown from Clarence Brunemann, program chairman and John G. Krieg, general chairman.

themselves in making arrangements for the visitors from every state in the union and Canada.

Each day began with an eight o'clock breakfast meeting. From these surprisingly well-attended and alert meetings the P.A.'s went to general meetings where they discussed such topics as automation and work speed-up; a "oneman purchasing agency"; commodity classifications and what should a public purchasing executive read.

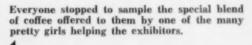


Michael M. Donohue, county purchasing agent of Allegheny County, Pennsylvania makes a strong point at the group meeting to discuss, "Purchasing Drugs and Pharmaceuticals." Four similar meetings were going on at the same time, discussing other pertinent topics.





Aaron C. Shepherd, city purchasing agent from Winston-Salem, North Carolina.





P. G. BardezBanian, city purchasing agent for Peoria, Illinois delivers his talk on a "One-Man Purchasing Office" while other speakers wait.

Arthur V. Stebbins, (right) from Campbell's Soups gives a sample to a visitor.



DECEMBER, 1957.

### Only New HALLOWELL ERECTOMATIC. Steel Shelving



LESS TIME, MORE UNITS PER HOUR, lower costs with Hallowell ERECTOMATIC steel shelving. Maximum adaptability to meet changing conditions, too.

No matter what type of shelving you need—oper, closed, bin units, ledge units, counter or cabinets—there's new Hallowell Erectomatic\* steel shelving to make your job easy. The unique built-in locking device\* speeds assembly and rearrangement of shelving. To position a shelf—just slide it into place on the shelf supports, press the locks, and the shelf is locked. To reposition a shelf—release the locks, pull the shelf straight out, slide it straight in on its supports at the new location, and press the locks. It takes only seconds to do the complete job.

For complete information, see your Hallowell distributor. Or write Hallowell Shop Equipment Division, STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.

\*Patent applied for

TWO MEN ASSEMBLED new Hallowell ERECTOMATIC steel shelving in just over 10 minutes. Closed unit was 36 in. wide, 18 in. deep, 7 ft. 3 in. high, complete with seven shelves. Standard models of other design required from 13-55 min. Table shows test results.

Brand	Time to Assemble (Min.)	Units Per Hous
Erectomatic	10.24	5.75
A	13.23	4.53
В	14.24	4.21
C	16.30	3.68
D	18.12	3.31
E	25.03	2.40
F	55.03	1.09







FAST ASSEMBLY. Just position the shelf supports, insert the shelf, and press the unique locking device. No tools or special instructions necessary.

# gives you all these extra-value features



QUICK SHELF CHANGE. Just release the locks, remove the shelf and its supports, relocate the shelf, and press the locks. It takes only seconds.



STRAIGHT-IN, STRAIGHT-OUT SHELF CHANGE. No tilting to interfere with any other shelf. No time wasted unloading shelves or removing bin fronts, partial dividers, label holders.



INDEPENDENT SHELF POSITIONING. Each shelf is an independent unit. Can be removed and repositioned without disturbing any other part. All shelves in a rack can be aligned.



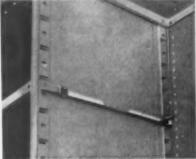
FULL USE OF SHELF AREA. No angles or tees, and beaded corner posts prevent waste of valuable storage space. No box guides are needed.



COMMON SIDE PANELS AND POSTS save assembly time. Also save material between adjacent units in a rack. And both back and side panels are one-piece.



BEADED POSTS AND FLANGED SHELVES prevent snagging of clothing or stored goods. Also prevent injuries from sharp, ragged edges.



FULL DEPTH SHELF SUPPORT. Load is distributed over full depth of shelf. No buckling is possible. Reinforcements can be added when they are required.



4 CLASSES OF SHELVES. Regular, medium, heavy, and extra-heavy shelf construction meets all load requirements. Made to government specifications. Extra-heavy shelf shown.

STANDARD PRESSED STEEL CO.

HALLOWELL SHOP EQUIPMENT DIVISION

### How to Organize

### A Discussion Meeting

By Paul C. Beacher, Thompson Products, Inc.
Danville, Pennsylvania

CIVILIZATION IS entering a new era of living, with the guided missile, atomic energy and many other things becoming a reality. Our colleges are training engineers, scientists, accountants and even purchasing personnel to cope with this new concept of living.

There are a few colleges offering courses for the procurementminded individual and at times, we may like to turn the clock back and begin our purchasing career with a diploma stating we are qualified buyers.

Progress cannot be obtained by turning back a clock, but must be measured by what we as individuals can and will do in the future. We must train ourselves for this new era as rapidly as possible in order to stand shoulder to shoulder with the newly trained engineers and accept our responsibility so rightfully bestowed upon us by management.

I would like to discuss a procedure for organizing and conducting a series of forum-discussion meetings for experienced purchasing agents.

Step #1. Determine the amount of interest your organization may have for this type of program and what phases of purchasing would be needed by the majority. This first step can be accomplished either by personal contact or sending out forms to be completed by each member. (The latter being preferred.)

Step #2. With the results of the survey, a committee can then make tentative plans for carrying out this program. These meetings, if at all possible, should be scheduled for times other than regular monthly meetings, because, after an hour for dinner, another half hour for the monthly meeting, most people are about ready to go home to watch television. Although it is not the best way. I'm afraid most of us will have to be content to hold it during the regular monthly meeting, keeping in mind that only one (1) subject should be covered at each meeting and only the time required to cover this subject be utilized, avoiding wasted time relating to other subjects not on the agenda for that evening.

Step #3. A budget for expenses should be prepared keeping in mind the talent you may have within your own organization, instead of spending money to bring in outside teachers. The best move may be to spend some money and procure courses already prepared by an institution of learning, and use your own people to present it. Step #4. Prepare a report to the executive board or officers, outlining the tentative plans and the budget.

Upon completion of the four steps mentioned, an education committee's work is just beginning. They now have the authority from the executive board to proceed, and the local members have designated their interest by filling out the survey forms. The question that faces the committee is what system to use to derive the most for the local members.

This decision had to be arrived at about two years ago by the staff purchasing department of the company for whom I work. This program was purchased from an institute of learning and presented by purchasing agents within our own organization to approximately 60 of the buyers.

The course consists of two sets of work papers—Instructor Notes and Purchasing Course Cases. The Purchasing Course Cases are given to all students prior to class with the understanding they read them and be ready for a discussion in the classroom. These cases can be written to cover any phase of purchasing, allowing the buyer to get enough ammunition together to answer the following:

"What would you have done if faced with this problem, Why, How and When."

The instructors notes have enough questions to continue the discussion until all feel that a proper solution has been determined. The instructor also has a written solution to the problem. It is a solution and not necessarily the solution

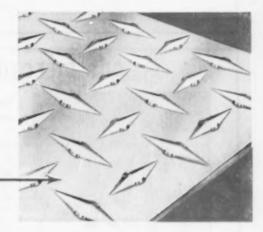
This type of program worked for our company, it may also work for a local purchasing agents group. Regardless of what system is used, the success of an education program is determined by the amount of energy and time a person is willing to put into it.

Abstract of an address to the National Committee on Education of District #5, N.A.P.A.

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# CDF PLASTICS AND FIBRE

### CDF PRODUCTS OF TEFLON

CDF produces an unequalled range of electromechanical parts of Teflon\*—such as spaghetti tubing, glass-based laminates, flexible insulating tapes, sheets, rods, tubes, and finished parts. Now also available: cementable Teflon in supported and unsupported forms; can be cemented to itself and to most other materials with commercial adhesives. If you have a potential use for a product made from unsupported or reinforced Teflon—from tapes to high-heat-resistant printed-circuit laminates—your CDF sales engineer is the man to call. Meanwhile, write for the new CDF Teflon Folders.

\*duPont trademark for its tetrafluoroethylene resin

Heart of the best printed circuits-

### CDF METAL-CLAD LAMINATES

Printed-circuit dependability begins at the base, and that's where CDF excels. Only CDF offers the combination of Teflon\* resin and woven glass cloth for use under sustained temperatures of 200° C. In addition, CDF offers a full range of metal-clad laminates to meet every known demand of printed circuitry. High foil-bond strength withstands soldering heats, reduces assembly rejects. Full line of metal-clad grades—woven-glass and paper-base—with Teflon\*, epoxy, and phenolic resins. Assembly costs go down when the job is done on CDF Metal-Clads! Write for CDF Metal-Clad Folder.

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### CDF DILECTO LAMINATED PLASTICS



for electrical and mechanical applications

DILECTO®, made in scores of grades, is the highest-quality laminated plastics made for rigorous duty in electrical, electronic, and mechanical equipment. Characteristics vary with the grade, so get the expert assistance of your CDF sales engineer.

Resins available in Dilecto:

Phenolic Epox Silicone Melo

Epoxy Melamine

Polyester Teflon\*

### Bases for Dilecto:

Woven Glass Fabric Woven Nylon Fabric Woven Asbestos

Fabric Woven Cotton Fabric Glass Mat Asbestos Mat Cotton Mat

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CDF gives fast technical and delivery service on sheets, tubes, rods, or complete fabricated parts of Dilecto plastics. Write for Catalog D-55-8.

\*duPont trademark for its tetrafluoraethylene resin



PLASTICS
FABRICATION
BY CDF SAVES
YOU TIME,
MONEY, WORRY

Let CDF's well-equipped machine shops assume the complete responsibility for delivery of plastics and/or fibre parts on time and as specified. No time is lost at CDF between raw-material production and final fabrication; in fact, special production runs are often scheduled to coincide with machining, to save the customer money on finished parts. When you let CDF do it for you, there's no problem of shortages, rejects, waste. Undivided responsibility pays off for you!



### CDF HIGH-HEAT ELECTRICAL TAPES

Flexible insulating tapes for hand or automatic winding, made of silicone rubber, silicone varnish, Teflon\*, and Micabond, with and without backings. Color identification—CDF tapes of unfused Teflon are made in twelve colors for circuit identification. Call your CDF sales engineer, or write for test samples.

\*duPont trademark for its tetrafluoraethylene resin

# **PURCHASING NEWS**



### DIAMOND VULCANIZED FIBRE

keeps costs down

Known for over sixty years as the standard of quality in fibre, Diamond® Vulcanized Fibre is made in many grades (bone, fish-paper, trunk, commercial, built-up) and is available in sheets, rods, tubes, strips, rolls, or formed specialties. Write for Catalog DVF-55.

LOW-COST VULCOID Resin-impregnated Fibre.

Vulcoid (made only by CDF) combines the desirable electrical properties and mechanical adaptability of vulcanized fibre with the great moisture-resistance and dimensional stability of phenolic laminates. UL-approved as Class A insulation in electronic equipment. Write for Bulletin V-55.





### CDF CELORON MOLDED PRODUCTS

Celoron is a molded-macerated and/or combination laminated base bonded with phenolic resins. High strength, long life, and low cost are the characteristics of molded electro-mechanical parts made from CDF Celoron®. Its good electrical properties make Celoron an ideal molded insulator, while its high mechanical strength makes it an excellent material for gears, couplings, intricate static-free loom parts, etc. Get samples and Catalog C-56 by writing to CDF or asking your CDF sales engineer.

For a better motor or generator-

### CDF MICABOND INSULATING PARTS

CDF mica V-rings and slot liners insulate America's best-selling motors and generators. Finest-quality mica splittings insure highest heat-resistance and insulation under severe operating conditions.

Forms of Micabond® available: Sheets; Tubing; Tapes (with backings of cotton, silk, paper, woven glass, and Mylart polyester film; Fabricated Parts of various shapes. CDF supplies and fabricates Micabond to your strictest specifications—on time and at low cost. Call your CDF sales engineer or write for samples of Micabond and Catalog M-55.

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Because Shenango tubular stock is centrifugally cast, impurities and pockets are forced out of the metal in the molten stage. Moreover the grain is finer, pressure-dense and more uniform. This results in smoother machining, better control, and less waste of time and metal.

Made of high-strength Meehanite metal or long-lasting bronze, Shenango tubular stock comes in a *complete* range of I.D. and O.D. sizes. Its lengths go up to 20 feet, depending on diameter, which keeps cut-off waste to a minimum.

While the demand for Shenango bar stock is largely tubular . . . solid round, square, hexagonal, rectangular and other special shapes are readily available.

It will pay you to specify Shenango bar stock for longer wear, greater strength, fewer rejects . . . and lower over-all cost. For full information, write to: The Centrifugally Cast Products Division of The Shenango Furnace Company, Dover, Ohio.



For More Information Circle No. 346 on Inquiry Card-Page 17

# association news

### Syracuse P.A.'s Learn About Wire

T. W. Whipple, vice president of the E. H. Titchener & Company, Binghamton, New York was the principal speaker at a recent meeting of the Purchasing Agents Association of Syracuse.

The title of Mr. Whipple's talk was, "Working Wonders With Wire." Mr. Whipple took time to mention some of the "out-of-the-ordinary" uses for wire, such as, a drive-in theatre, a pair of shoes, and a television program.

### Air Moving Industry To Assure Performance

An international program to assure business, industry and the public that air moving equipment will perform as the manufacturer claims, has been launched by the Air Moving and Conditioning Association.

Leading U. S. and Canadian manufacturers are expected to take part in the program, and will sign a license agreement with AMCA to maintain manufacturing control so that each unit of the same size and type will have identical performance ratings.

In the past, considerable confusion and misunderstanding has surrounded the presentation of performance ratings for fan-operated products. The equipment used could seldom be sure that the product had been properly tested; that ratings were accurate.

The program, which involves inspection and approval by AMCA during actual testing, is designed to restore the confidence of the buyer by protecting him against inaccurate ratings.

Target date for completion of checking test and data submitted by each firm, and publishing a list of approved laboratories and names of participating companies, is January 2, 1958.

For More Information Circle No. 347
on Inquiry Card—Page 17->
PURCHASING



Where more driving power is called for, switch to Powerflex Hi-Capacity V-Belts. These new *premium* belts can step up the drive capacity of "under-belted" drives by as much as 40%.

If your present belts are being stretched beyond their take-up allowance... or if you're going to replace worn or damaged pulleys... change to Powerflex Hi-Capacity V-Belts. They permit you to use fewer belts and narrower sheaves... reduce drive costs.

Powerflex Hi-Capacity V-Belts are available in all standard sizes, and feature a special oil-resistant cover which prolongs belt life. Static conducting covers can be supplied. Order from your Thermoid Distributor, or write direct for complete information.



THERMOID COMPANY . Trenton, N.J.



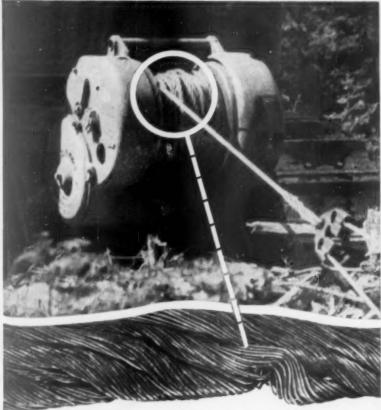
There's a Thermoid Conveyor Belt



... and Thermoid Hose for every job.

## crushing...

is this your wire rope problem?



## Right construction for the job reduces downtime...cuts wire rope costs!

SEND FOR LESCHEN "RED-STRAND" BULLETIN NO. 102 Once wire rope is crushed or pinched out of shape on sheaves or drums, useful life is drastically shortened. More often than not, this loss can be prevented. Minor changes in equipment, adequate inspection or using the most suitable rope construction may eliminate the difficulty entirely. These and other solutions are clearly explained in Bulletin No. 102 which is yours for the asking. By all means write for your copy today. Feel free, too, to ask for solutions of any other wire rope prob-

lems you'd like to have solved. The full resources of our engineering staff and field organization are at your service. Address: Leschen Wire Rope Division, H. K. Porter Company, Inc., St. Louis 12, Missouri.



#### H. K. PORTER COMPANY, INC.

LESCHEN WIRE ROPE DIVISION

For More Information Circle No. 348 on Inquiry Card-Page 17

## association news

#### Central Iowa P.A.'s Plan Product Show

The Purchasing Agents Association of Central Iowa has begun planning for its third Products Show to be held in the Veterans Memorial Auditorium, Des Moines, on October 15 and 16, 1958.

Preview announcements have been mailed to past exhibitors, said James M. Casey, show manager, and exhibit space will be opened up for sale to other firms on December 15. "Next year, we expect to have more space, more exhibitors, more spectators," he said. "Again, key personnel of Iowa's nearly 4,000 factories in 600 cities will receive invitations and free tickets."

Members of the Products Show committee of the association are, in addition to Mr. Casey, W. L. Howlett, Firestone Tire & Rubber Company, Des Moines, chairman; A. W. Baldock, Globe Machinery & Supply Company, Des Moines; Donald R. Foster, Midwest Metal Stamping Company, Kellogg; and Herbert A. Lubke, Solar Aircraft Company, Des Moines.

#### New York P.A.'s Hear Steel Official

A four per cent rise in steel consumption in 1957 was forecast by J. M. Curto, New York district manager of sales of United States Steel Corp. at a recent dinner meeting of the Purchasing Agents Association of New York at the Hotel New Yorker.

Mr. Curto said the key factors in evaluating future business conditions are the international situation, credit and business spending for plant and inventories. His company's products, he reported, are now in good supply.

He said one of the major prob-(Please turn to page 216)

# Hydraulic-Powered Sealer-Stretcher Combination

Get faster, more efficient strapping operation with the new strapp

... provides
controlled
tension—
faster
operation

CTET FASTER, more efficient strapping operation with the new USS Gerrard Model 56-57: pushbutton operation of tension and return stroke. Automatic, predetermined tension control guarantees same tension on every package. Sealer head is easily positioned and push-button-operated. Sealer head converts from ¾" to 1¼" flat steel strapping in less than 60 seconds. Can be used with powerdriven strap dispenser for maximum speed and efficiency. For complete information on the fast, efficient USS Gerrard Model 56-57, just clip out and send in the handy coupon, today.

## GERRARD STEEL STRAPPING



Department of

U. S. STEEL SUPPLY DIVISION

United States Steel, General Offices: Chicago, Illinois

UNITED STATES STEEL

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New Gerrard Blue Book of Packaging

Folder on Hydraulic Sealer-Stretcher
Folder on Automatic Strapping Machine

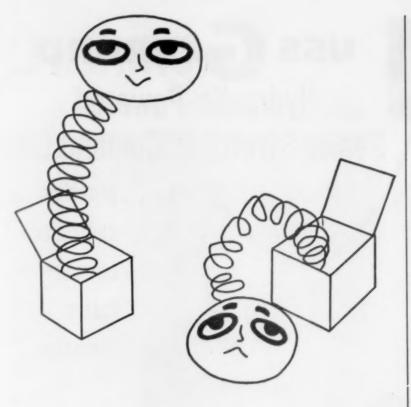
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Company

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City ...... State.....

For More Information Circle No. 349 on Inquiry Card-Page 17



#### Some Springs Have It...Some Don't

The difference in spring performance is most often due to the wire or strip used... and there's more to a spring material than just the "bounce". How about other requirements, such as corrosion resistance, high temperature properties, fatigue resistance and low temperature toughness.

When your springs need any of these properties your best bet is one of our alloy spring materials.

Riverside-Alloy Metal Division can supply you with spring wire and strip in stainless steels, nickel alloys, phosphor bronze and beryllium copper. Learn more about our spring materials. Write to

Riverside-Alloy Metal Division, H. K. Porter Company, Inc., Riverside, N. J.

Send today for our free handbooks



ALLOY METAL WIRE Prospect Park, Pa.

RIVERSIDE METAL Riverside, N.J. PRENTISS WIRE MILLS

#### H. K. PORTER COMPANY, INC.

RIVERSIDE-ALLOY METAL DIVISION

For More Information Circle No. 350 on Inquiry Card-Page 17

## association news

(Continued from page 214)

lems confronting the steel industry is that of expansion. Mr. Curto noted that this expansion is going ahead despite the difficulties in financing a growth of such magnitude.

Mr. Curto said that there would be continued strong demand for structural shapes and plates for the remainder of the year and for 1958. There will be no shortage of bars, he said, in the immediate future, while tin plate will be the most stable major steel product. He added that although reduced buying by automobile companies caused a weak sheet and strip market in 1957, the demand should increase sharply along with an expected upturn in auto production for the 1958 models.

#### N. Y. Purchasers Increase Membership

"Lubricating and Cutting Oils" was the topic for discussion at the forum of a recent meeting of the New York Metropolitan Purchasers Club. After dinner in the Governors Room of the Diplomat Hotel, President Harold Mead introduced the feature speaker of the evening, C. Norton Thomas, combustion engineer, Paragon Oil Company, Inc.

Mr. Thomas' talk was on "How to Buy Fuel Oil." The topic stimulated many questions from members.

The following new members were introduced and heartily welcomed: Joseph Minafri, Ralph B. Carter Company; Donald G. Clough, Columbia University; Leon H. Jaffe, Tube and Light & Engineering Co.; Ralph Layer, Chemical Construction Corp.; Herman W. Berghahn, Chemical Construction Corp.; Catherine Stemberger, Knickerbocker Toy Company; and Benjamin Cohen, Eagle Pencil Company.

For More Information Circle No. 351 on Inquiry Card—Page 17-> PURCHASING



CHIP-BREAKER ASSEMBLY: On the opposite end, mounted under the reciprocating chip-breaker wheel is the chip-breaker table with vertical adjustments. It accommodates adjustable tool black fixture which holds tool in place while grinding chip-breaker groove at desired angle.





#### DUAL PURPOSE RECIPROCATING TOOL GRINDER

## Ex-Cell-O takes all the work out of both conventional and chip-breaker tool grinding

Now an entirely new reciprocating double end tool grinder designed by Ex-Cell-O to do two jobs in one—conventional grinding on one end, chip-breaker grinding on the other—has now been added to Ex-Cell-O's line of conventional, double end, carbide and Method X tool grinders. The difference is the adjustable, power-controlled reciprocation of grinding wheels. The operator need only hold the tool at the pre-set angle.

Other features of this new grinder include: variable stroke (0 to  $1\frac{1}{2}$ "); variable number of reciprocations (0 to 220 strokes per min.); in-built motorized precision grinding spindle, saddle-mounted to reciprocate along hardened and ground bars which are mounted on pre-loaded ball bushings. You'll want to see for your-

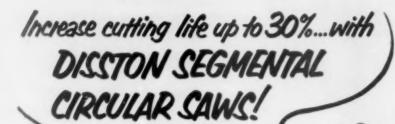
self the capabilities of this new Ex-Cell-O—to do so, simply contact your local Ex-Cell-O Representative. Or, if you wish, write direct to Ex-Cell-O, Detroit. Ask for Bulletin 461872.



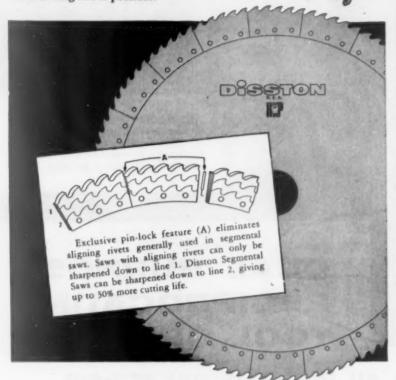
Machinery

Division

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Exclusive pin-lock feature locks segments together by aligning pins—permanently holding the segments in perfect alignment. Since there are no aligning rivets to limit sharpening, up to 30% more cutting life is possible.



- Replaceable high-speed steel segments need only infrequent sharpening.
- Narrow kerf assures fast, clean cutting with minimum waste.
- Teeth are accurately indexed so they may be sharpened on automatic machines.
- · For cutting ferrous or non-ferrous metals.
- In diameters from 11" to 63".

For cutting non-ferrous metals and plastics Disston also manufactures a complete line of solid tooth Diss-croloy and Alloy Circular Saws.

For new literature write to Henry Disston Div., H. K. Porter Company, Inc., Phila. 35, Pa.

#### H. K. PORTER COMPANY, INC.

Henry DISSTON DIVISION

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### association news

#### Washington Ass'n Hears Purchasing Editor

Dean S. Ammer, Technical Editor of Purchasing Magazine, was the guest speaker at a recent dinner meeting of the Purchasing Agents Association of Washington, D. C., held at the Hotel Ambassador.

Mr. Ammer presented an economic forecast for 1958 and analyzed the factors that comprise the economy. He also spoke of the value of economic indicators and the best methods to utilize them for more scientific purchasing operations.

President George Frediani chaired the meeting and Program Chairman John Chandler introduced the speaker.

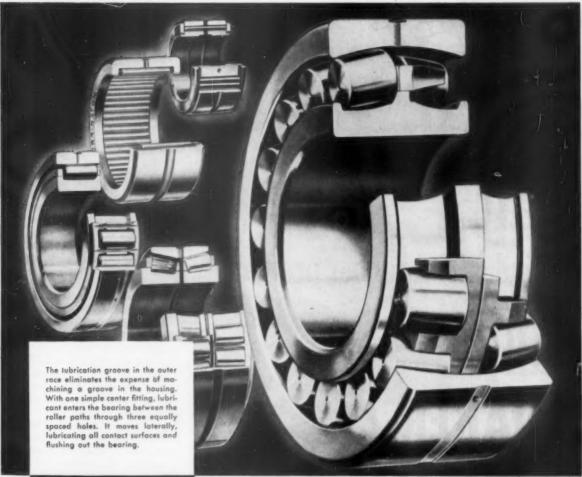
Besides the regular monthly meetings the Washington Association will sponsor a "Purchasing Seminar." To be given as seven meetings during the winter months, the course will include: Legal Aspects of Purchasing; Contract and Contract Administration; Human Relations in Purchasing; Inventory Control; film on "Industrial Purchasing" (which is available from Purchasing Magazine); Reports to Management.

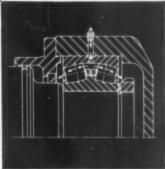
#### Chattanooga P.A.'s Hear Trucking Executive

The Purchasing Agents Association of Chattanooga at their regular monthly meeting listened with great interest to C. D. Hardesty, Jr., general traffic manager, Mason-Dixon Lines, Kingsport, Tennessee.

Mr. Hardesty spoke on "Choosing the Carrier." He emphasized the research his industry was engaged in so as to make choosing the carrier more simple.

A question and answer period was held and the new innovation of piggy-backing freight was discussed with much interest.





#### A time-proved lubricating method now available on Torrington Spherical Roller Bearings

The circumferential groove in the outer race has met the test of experience in many Torrington Bearings, including Heavy Duty Needle Bearings, Aircraft Type Needle Bearings, Tapered and Radial Roller Bearings. Now the circumferential lubrication groove is available in Torrington Spherical Roller Bearings.

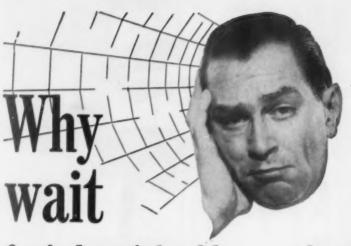
This design feature makes it possible to introduce lubricant between the roller paths without the expense of machining a groove in the housing. This groove is proportioned to provide generous lubricant flow capacity. Lubricant moves through the roller paths, flushing used lubricant and contaminants away from bearing contact surfaces.

Torrington Spherical Roller Bearings in many sizes may be ordered with this groove as desired at no additional cost. For further information, see your Torrington representative or write: The Torrington Company, South Bend 21, Ind.—and Torrington, Conn.

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District Offices and Distributors in Principal Cities of United States and Canada

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Distributors and Warehouses
provide on-the-spot service
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... for these fine industrial rubber products: BELTING: conveyor, transmission or V-belting . . . HOSE: air, water, steam, oil, suction or welding hose ... PACKING: chute lining, duck and rubber packing, press pads, sheet packing . . . GASKETS-MATTING . . . MOULDED AND EXTRUDED RUBBER PRODUCTS.

Por more information, write: H. K. Porter Company, Inc., Quaker Rubber Works, Philadelphia 24, Pa. or Pioneer Works, Pittsburg, Calif.

#### H. K. PORTER COMPANY, INC.

QUAKER RUBBER DIVISION

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### association news

#### Georgia Holds Diversified Meeting

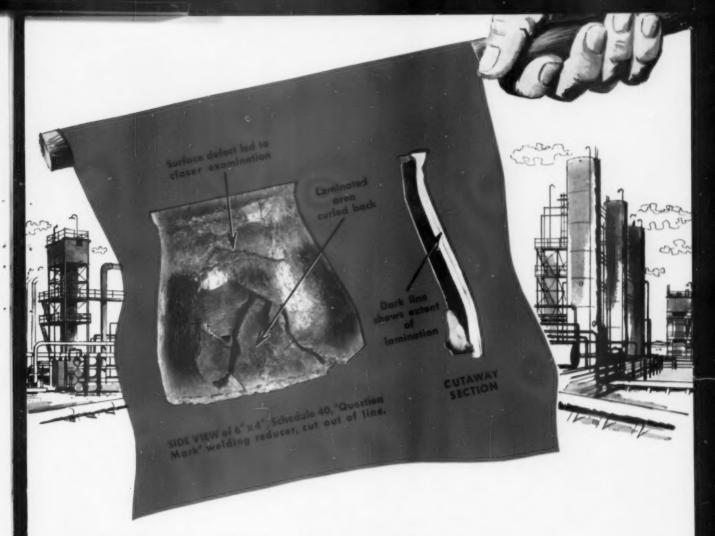
Formation of a Distributors Buyers Group was discussed at a recent meeting of the Purchasing Agents Association of Georgia. Howard Baer was appointed chairman of the committee to contact the distributor's buyers and to stimulate interest along that line. The general feeling in the association, since Atlanta has become such an important distribution center, is that such a group would be beneficial to the entire association, as well as to those engaged in that business.

The feature of the evening was brought by Jim Tatum, chairman of the standardization and new products committee, and a panel from that committee. The new products portion of the program was given by Howard Baer, who presented illustrations of how plastics are coming to the forefront in the packaging field and how science is working to improve existing products. Some of the examples shown were plastic berry baskets, plastic hot cups, plastic cushioning material, and new molded fiber and pulp packaging items.

Standardization at Georgia Power Company and throughout the electrical industry was the subject of J. R. Carmichael. Mr. Carmichael told of enormous savings effected through the operation of the company's standards committee and the practice of standardizing on poles, meters, transformers, wire and hardware used by the company.

FOR MORE INFORMATION
ON PRODUCTS IN
THIS ISSUE
USE INQUIRY CARD
PAGE 17

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## Watch out for the after-costs of Question Mark fittings!

Unknown fittings may look like a bargain on the price tag, but watch out for the consequences!

Surface defects led to the above "Question Mark" fitting being cut from the piping. Further examination showed the steel inside was laminated. Pieces cut out literally fell apart. Here was an open invitation to serious trouble . . . lost production, wasted dollars and possible human casualties.

This is another example of a dangerous situation posed by unknown fittings of questionable quality . . . a serious threat to the safety and economy of well-engineered piping.

You can avoid these risks by specifying KNOWN fittings!



DANGER! Your first warning of Question Mark fittings is their lack of complete, permanent identification of manufacturer, wall thickness, weight, material . . . as required by A.S.A. code.

A message in the interests of top quality piping ... by Tube Turns, Louisville, Kentucky

YOUR SAFEGUARD



Safeguard your piping investment with known fittings!



TOP QUALITY! Directional and size changes in this process piping are made with TUBE-TURN Welding Elbows and Reducers . . . recognized for their unsurpassed uniformity and quality.

The cost of fittings is a small fraction of the total cost of a piping system. To buy "cheap" fittings and run the risk of impairing the performance of your entire system can, therefore, be "penny wise and pound foolish."

When you specify and buy TUBE-TURN\* products, you know your investment is safeguarded by unsurpassed quality of fittings and flanges. They meet all American Standard and Safety Code requirements. Each product is permanently marked with complete size and material designation.



COMPLETE LINE! Your nearby Tube Turns' Distributor gives you prompt delivery from the complete line of more than 12,000 Tube Turns' stocked items. Photo courtesy The Ross-Willoughby Co., Columbus, Ohio.

TUBE TURNS, Dept. R-9 224 East Broadway, Louisville 1, Kentucky Please send new Standard for Butt-Welded Carbon Steel Piping Systems.

Company Name

Zone State

Company Address

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Position

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## Moline link attachments adapt Moline Chains to many jobs

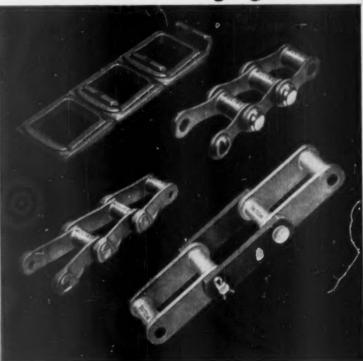
#### STANDARD ATTACHMENTS Only a few of the wide variety of Moline Chain attachments are



## Molime Chains

Specializing in the manufacture of chains





#### Conveying and Elevating

THERE IS NO LIMIT to the number of jobs which can be handled by Moline Chains. With the wide variety of standard link attachments available, the possibilities for adaptation are endless. Both right and left hand types are made to the exact size and pitch of the regular chain links.

With Moline Chain, equipped with standard attachments, you can push, pull, scrape, elevate and carry an endless variety of materials and objects.

At the same time you can cut your overall chain costs because Moline Chains and attachments are engineered for maximum efficiency...trouble-free performance...and long life. Only Moline Chains are triple-tested to guarantee maximum quality control.

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#### MOLINE MALLEABLE IRON COMPANY

St. Charles, Illinois



These high grade precision parts are assured of protection from rust and corrosion by use of Cleveland Containers with liners treated with VPI (vapor phase inhibitor), a new and highly effective corrosive barrier.

Parts are clean and ready for use when removed from the package. The necessity of a heavy coat of grease or oil is eliminated. Parts may be removed from, or replaced in the original container with no loss of effectiveness of the VPI.

Containers, of 2-piece construction as shown above, can be used to package parts in various lengths. Of quality fibreboard with metal ends, they also provide protection from damage in handling, shipping and storage. Can be labeled with pre-printed wrappers, direct printing or plain color wraps.

Effective and economical, these Cleveland Containers are ideal for packaging spare parts, precision instruments and other articles requiring protection from rust and corrosion.

For help on any of your packaging problems, write our nearest plant.

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association news

Value Analysis Main Feature of Dayton Seminar



Howard T. Lewis (left) discusses "Value Analysis" with L. D. Miles.

"Cost Reduction Begins With Procurement" was the theme of the second annual conference on industrial procurement conducted by the University of Dayton recently.

Co-sponsored by the Dayton Association of Purchasing Agents, the conference drew representatives of businesses and industries from 16 cities in Ohio and six other states. Heading the program was Dr. Howard T. Lewis, professor emeritus of the Harvard School of Business Administration.

Joining Dr. Lewis for the opening session of "value analysis" was L. D. Miles, manager of value analysis of the General Electric Company. Mr. Miles brought to the two-day conference a number of examples of parts to which the principles of value analysis have been applied with resulting savings of millions of dollars in the past ten years.

Mr. Miles told the conference that the thinking of a purchasing agent must be oriented toward a concept of value based on "use" rather than "prestige" or "exchange." The lowest cost alternative of adequately performing

(Please turn to page 228)



these products

ACIDS AIR ANTIBIOTICS ANTIFREEZE BEVERAGES CATALYSTS COATINGS CONFECTIONS COOLANTS COSMETICS CUTTING FLUID DETERGENTS ESSENTIAL OILS FATS FOODS FUELS GASES GASOLINE GREASE HYDRAULICS INTERMEDIATES LACQUERS LIQUORS MEDICINES OILS OINTMENTS PAINTS PASTES PETROCHEMICALS PIGMENTS REFRIGERANTS SOLVENTS SYNTHETICS SYRUPS TOOTHPASTE

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#### How to make standard units do special filtering jobs

Today's close mechanical tolerances and high standards of product purity have compelled engineers to adopt filtration as a basic design tool. Problem is - where and when can you save time, money and headaches by specifying standard off-the-shelf units to fit widely diversified applications?

To meet this situation, Purolator engineers have assembled the filter information designers most often need. So, if filtration is a factor in the equipment you're designing, let Purolator, most experienced filter manufacturer in the country, give you technical help in picking a standard unit for the job.

Filtration For Every Known Fluid

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Please send me the following filter information

- ☐ Industrial Filter Catalog
- Filters for the Aircraft Industry
- Here is a schematic drawing and details of our problem. What would you suggest?

Company. Address State City

For More Information Circle No. 358 on Inquiry Card-Page 17 DECEMBER, 1957

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## How many hats do you wear?

It has been said that a product design engineer must wear many different hats. First of all, he has to think out a gadget that will do a certain job without falling apart. Then, he has to be a production expert because he has to be sure that his gadget can be made. Can it be made economically? He has to know some cost accounting. Has he specified screwball component parts? He has to know a lot about purchasing—what materials are available, when they can be delivered and all the rest.

Since most machines contain some springs, your design engineer should (ideally) also be a spring engineer. But don't you have to draw the line somewhere? The most skilled group of spring engineers in the nation are at your beck and call without any obligation. The men at American Steel & Wire have been specialists all their lives. A problem that is new to you may be old hat to them. More than that, they know spring-making machinery, and can suggest design modifications that will allow more efficient production methods. Result? Lower cost for you.

Like they say in the ads, no order is too small or too large. Just call your AS&W representative,

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UNITED STATES STEEL, GENERAL OFFICES: CLEVELAND, ONIO COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA... SOUTHERN DISTRIBUTORS UNITED STATES STEEL EXPORT COMPANY, NEW YORK

## USS AMERICAN QUALITY SPRINGS

UNITED STATES STEEL





Over one-third of the world's tin comes from the Federation of Malaya. Called Straits Tin, it is at least 99.87% pure and is famous for its absolute reliability of grade.

Just how dependable is the supply of Straits Tin? It's more dependable than the supply of manganese, for instance; just as dependable as the supply of any other imported metal; and more dependable than the supply of some kindred domestic metals.

Just how adequate are Malaya's tin ore reserves? There's just as much unmined ore as has been mined since prehistoric times, according to an official and authoritative assessment.

What assurance of a fair and reasonable price do U.S. tin consumers have? The International Tin Agreement, now in operation, is designed to provide that assurance. The agreement is operated by a council representing 14 tin-consuming and 6 tin-producing countries. The consuming group must approve everything proposed by the producing group.

What research is being performed to find new metallurgical and chemical uses for tin? Since its establishment in 1932, the Tin Research Institute has developed more new uses and applications of tin than were found in the preceding 50 centuries.

Why use tin instead of other materials? Because tin has unique properties that make it better than other materials. The salient fact about the search for substitutes for tin is that millions of research dollars have been spent without finding anything better for various uses, or even as good, while the research dollars spent on new uses for tin have paid rich dividends.



Ask us to send you TIN NEWS, a monthly letter. It will keep you posted on tin supply, prices, new uses and applications.

The Malayan Tin Bureau
Dept. 45M 1028 Connecticut Ave., Washington 6, D.C.
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## association news

(Continued from page 224)

a function is the goal of the value analyst, he stressed.

Among various other topics discussed at the conference were the Ohio Sales Tax Law as it applies to the purchasing agent; legal, personnel and administrative problems in procurement; systems, procedures, records and forms; vendor relations, and inventory control.

Phil Hull, president of the Dayton Association presided at the second day's program. One highlight of the final day of the conference was a brainstorming session. Under the direction of Jack Moss, Charles Dempsey, and John Yeck, three groups produced hundreds of ideas on the topic "Making Your Procurement Expense Dollar More Efficient."

#### Old Dominion Ass'n Has Double-Header Program

The fall meeting of the Old Dominion Purchasing Agents Association was held at the Sir Walter Hotel "on-the-ocean-front" at Virginia Beach, Va. The attractive and restful atmosphere (the hotel and others in the area are virtually empty out-of-season) were conducive to the development of new purchasing ideas. On hand to stimulate thinking of members were N. T. Buddine, chief engineer of the R. J. Reynolds Tobacco Co. in Winston-Salem, N. C. and Paul Farrell and Dean Ammer, editors of Purchas-ING.

Mr. Buddine was the kick-off speaker of the first-day's open meeting. The subject of his talk was "Purchasing-Engineering" or "Purchasneering." Mr. Buddine, an accomplished speaker, provoked plenty of discussion (his topic is, of course, one that is often hotly debated in purchasing circles.) in the open discussion

period that followed. Moderator was D. W. Laird.

Following closed committee meetings, the group re-adjourned in the evening for a social hour and a banquet at which Association President R. F. Misfeldt presided. The after-dinner speaker was Donald Shriver, executive manager of the Norfolk Chamber of Commerce. The evening concluded with dancing to hi-fi music in the hotel's coffee shop.

First session the following morning was a closed meeting to discuss association business. This was followed by an open meeting featuring a discussion of the "Business Outlook for the Coming Year," by Paul Farrell, executive editor, and Dean Ammer, technical editor of Purchasing. Mr. Farrell pointed out that business forecasting is one of the P.A.'s great opportunities both to boost his company's profits and bolster his stature. Mr. Ammer then made a business forecast for 1958 using basic data available to any P. A. He re-emphasized that any P. A. interested in doing so could readily make such forecasts.

The two-day meet concluded with a directors meeting. Next meeting is scheduled for January 24-25 in Roanoke.

#### Alabama P.A.'s Discuss Standardization

The recent dinner meeting of the Alabama Association of Purchasing Agents was held in the Thomas Jefferson Hotel. Membership Chairman Carl Thomas made his report and presented the names of two new members. They were: Earl D. Hill, The Electrical Equipment Company, and George H. Chappel, Young & Vann Supply Company.

Guy Cofield, Alabama Power Company announced that the association in cooperation with the University of Alabama will offer a course in "Industrial Purchas-

The main feature of the program was devoted to three members who related their experiences regarding standardization. They were: Bill Fairburn, McCullough Industries, Inc.; Hershel Folsom, Owen-Richards Company and Bob Duquette, Moore-Handley Hardware Company.

For More Information Circle No. 361 on Inquiry Card—Page 17→ PURCHASING



## WHEN YOU CHANGE TO A FIRE-RESISTANT HYDRAULIC FLUID, CHANGE PACKINGS, TOO!

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The Garlock "ORANGE LINE" of packings has been developed specifically, and ONLY, for packing phosphate ester type fire-resistant fluids in dynamic applications.

The ORANGE stripe across the packings quickly identifies them as suitable for use against fire-resistant fluids. Butyl Rubber is the base material used in these packings and is not compatible with mineral base oils. Therefore the "ORANGE LINE" packings should only be used with the phosphate ester type fire-resistant hydraulic fluids.

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The Garlock "ORANGE LINE" for fire-resistant hydraulic fluids is available in Chevron\* Packings, Klozure\* Oil Seals, Split Klozures, U cups, flanges, O-Rings, and other forms of the Garlock 2,000 . . . two thousand different styles of packings, gas-



Garlock CHEVRON Packing set. Orange stripe quickly identifies packing as suitable for use against fire-resistant fluids.

kets, and seals to meet all your needs. It's the only complete line . . . it's another reason why you get unbiased recommendations from your Garlock representative. Call him today or write for further information on recommended packings for use against fire-resistant hydraulic fluids.

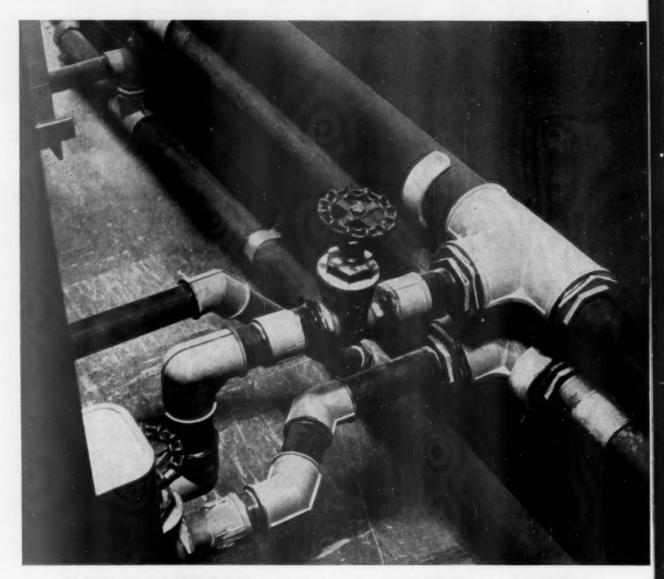
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Republic SRK cuts easily with an ordinary handsaw or hacksaw. Joints are "welded" together with a brushapplied solvent and a sleeve-type Atting.

Once the solvent is applied, the pipe is stabbed into fitting and given a Vs turn. That's all there is to it—and the "weld" is permanent.



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## TOUGH, LIGHTWEIGHT PLASTIC PIPE

#### solves re-piping problem at Blaw-Knox

Republic SRK was easier, safer, less costly to install... will resist corrosive liquids in cooling-tower installation

Corrosive liquids in the cooling towers of the Blaw-Knox Company of Pittsburgh, Pa., were raising havoc with the piping. Pipes lasted little more than a year before they had to be replaced. In an attempt to lick the problem, other pipe materials were tried. But initial costs proved too high. Then Blaw-Knox switched to Republic SRK—the amazing corrosion-resistant plastic pipe that practically eliminates replacement costs.

It's too early to check results, but based on past experience they are sure to be excellent. Republic SRK, installed in similar cooling-tower applications more than three years ago, is still good as new, showing absolutely no signs of damage or wear. And in every case there was a substantial savings-in material costs, installation costs, and, of course, replacement costs.

Within its temperature and pressure limitations, Republic SRK will prove ideal for many applications in the chemical and food processing industries—in both waste and process lines. It's highly resistant to a long list of corrosive liquids and gases. Being extremely tough, it will absorb terrific punishment.

Republic SRK is light weight, easy to carry. It cuts quickly, is easily joined by simple solventwelded sleeve-type fittings. This eliminates the fire hazard of a torch. And it's ideal to assemble where space is limited.

The latest manufacturing techniques, and highest standards of quality-control, result in wall sections of uniform strength throughout each length. Republic SRK comes in a range of working pressures—in sizes ½" through 6". Republic also supplies SRB (butyrate) and FE (polyethylene) Plastic Pipe. If you have a piping problem, write us. We can recommend the proper pipe for the job. Send coupon for literature.

REPUBLIC IS ALSO A BASIC PRODUCER OF MANY CHEMICALS DERIVED FROM COAL - benzois, toluols, xylols, sulphate of ammonia, tar, crude naphthalene, pyridine and crude heavy solvent. Like all Republic products, quality is controlled at every stage of production, from mine through coke oven, to final processing of the coal chemicals.





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PROBLEM when chemical products are transported through ELECTRUNITE® Stainless Steel Tub-

ing and Pipe made by Republic's Steel and Tubes

SAVE CONDUIT-REPLACEMENT COSTS BY INSTALL-ING DEKORONS-COATED E.M.T. OR CONDUIT-the electrical raceway that shrugs off corrosion. A tough, polyethylene coating over the galvanized finish actually provides double protection for your wiring systems where the atmosphere is excessively corrosive. Moisture-tight, corrosion-protected joints are made by wrapping the connections with plastic tape. Send coupon for details.



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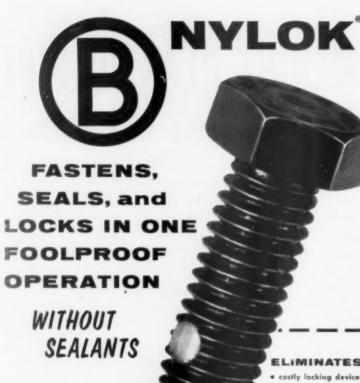
- SRK Plastic Pipe Coal Chemicals
- ☐ Republic ELECTRUNITE Stainless Steel Pipe and Tubing
- Dekoron-Coated E. M.T. and Rigid Steel Conduit

Company\_

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Zone State

For More Information Circle No. 362 on Inquiry Card-Page 17



® NYLOK fasteners are sure protection against gasoline, oil, air, and alcohol leaks. Stay locked in ANY depth...need not be fully seated...won't

Permanent insert of tough, resilient nylon is readily adapted to any (B) threaded fastener. Won't shrink, dry, age, or turn brittle. Unaffected by emperatures to 250° F...cannot damage threads or seating surfaces.

® NYLOK fasteners can be reused time after time. Nylon insert regains original shape after using...retains original ability to adapt, lock, and seal to any thread.

#### ELIMINATES

- e costly locking devices
- double inventory
- e lost time in application
- gummed-up threads that prevent reuse
- e premature drying of fastener sealants

#### ASSURES

- instant sealing
- · positive locking
- · fast assembly... power driving
- e smooth torque
- · easy hopper feed

#### **HOW NYLOK WORKS**



STANDARD BOLT

- As bolt tightens, metal-to-metal union of LOAD BEARING faces is made at (A). But, fluid entering at (B) flows downward on NON-LOAD-BEARING faces, leaking out at (D) and (E).

Lateral thrust of NYLOK pellet (B) → presses both LOAD-BEARING and NON-LOAD-BEARING faces tightly together. Fluid entering at (A) is stopped from fur-ther flow by NYLOK insert (B).



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WRITE for NEW Special Fastener brochure ... call (B) for quotes.

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SELF-LOCKING SELF-SEALING



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### association news

#### Rochester Ass'n Hears Former Congressman

Jennings Randolph, assistant to the president of Capitol Airlines, was guest speaker at the opening meeting of the Purchasing Agents Association of Rochester, Inc.

A member of the House of Representatives for 14 years, Mr. Randolph spoke only briefly on the scheduled topic of his talk, "The Dynamic Decade Ahead." He predicted a 30 to 35 per cent increase in the level of economic activity during the next ten years because of the cycle of new products and the planned diversification of American industry.

In addition, Mr. Randolph discussed in detail the three factors in the lives of men that make the foundation for the evaluation of human relationship. He said that men should learn to understand and respect the people with whom they come in contact during everyday business transactions, to be creative and resourceful and to have unbounded hope and unlimited faith in the future.

#### 3 M Official Speaks to Northern Calif. P.A.'s

A. B. Korfhage, government representative for the Minnesota Mining and Manufacturing Company, was guest speaker at a recent luncheon meeting of the Federal Procurement Officers Association of Northern California at the Leopard Cafe, San Francisco.

Mr. Korfhage gave a 30-minute address on the subject, "The Vendors' Views of the Government Purchasing Agent." His talk included comments on some of the problems facing industry in its dealings with the government.

President John F. Minor, Jr., General Services Administration, chaired the meeting.

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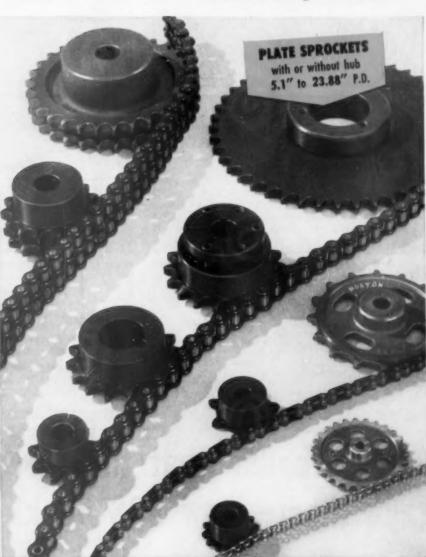
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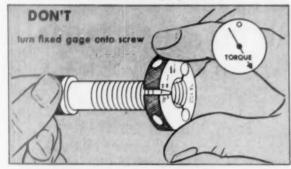
You get BOSTON GEAR top-rated quality and lasting economy. You save time and expense when you buy from local stock — at factory prices. Be cost-wise — standardize. Boston Gear Works, 74 Hayward St., Quincy 71, Mass.

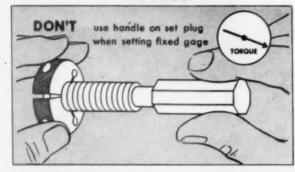
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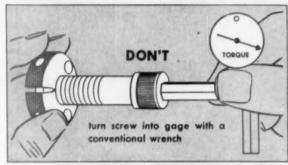
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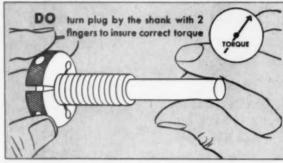


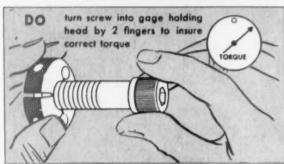
7124 "OFF-THE-SHELF" TRANSMISSION PRODUCTS FROM STOCK — AT FACTORY PRICES — ASK FOR CATALOG Stock Gears • Sprockets and Chain • Speed Reducers • Bearings • Pillow Blocks • Couplings

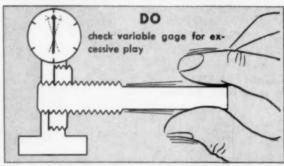












These illustrations from new SPS booklet show some of the do's and don'ts of gaging precision threads.

## 3A threads: what they are; how to gage them — new SPS booklet tells all

Threads made to Class 3A fit are the most precise in general use in industry. But you do not always get the 3A precision you specify. Because of many different gaging techniques that yield varying results, screws with threads well outside the Class 3A tolerance limits often pass inspection.

SPS has prepared a new booklet on this subject. It explains clearly what Class 3A threads are and the pros and cons involved in the widely varying gaging techniques in use today. It reviews the gaging of high and low limits of 3A threads, sampling techniques, and even the methods of gaging gages.

All standard Unbrako socket screw products fall within specified tolerance limits no matter what method is used to gage them. Leading industrial distributors carry complete stocks. Unbrako Socket Screw Division, STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.



We also manufacture precision titanium fasteners. Write for free booklet.

Form 2239, "Class 3A Threads: what they are; how to gage them." 16 pages, with many illustrations. Write for free copy today.

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Has higher strength



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AUTHORITY ON PACKAGING . SANDUSKY, OHIO 14 FACTORIES . 42 SALES OFFICES association news

#### Pittsburgh P.A.'s Hold Two Meetings

Two interesting speakers highlighted recent dinner meetings of the Purchasing Agents Association of Pittsburgh.

At one meeting, Wray H. Reger, General Electric Company, spoke on "Value Analysis." A graduate electrical engineer who has conducted value analysis training seminars, Mr. Reger gave a fact-packed presentation of all aspects in value analysis.

Nelson J. Gibbons, chairman of the public relations committee of the National Association of Purchasing Agents, made an address at another meeting about the communications methods a P. A. can use to obtain further recognition. He was introduced by George H. Porter III, chairman of the Sixth District public relations committee.

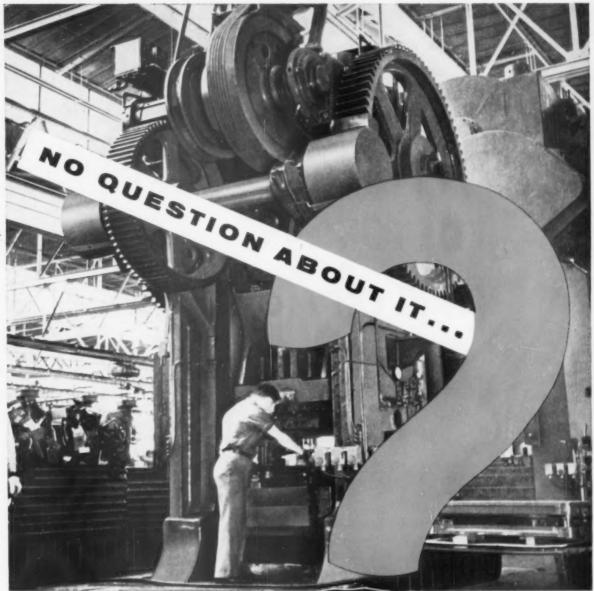
The association is planning its annual Christmas party for December 10 at the University Club.

#### Dallas P.A.'s Hold Interesting Meeting

Three interesting and educational meetings were held recently by the Purchasing Agents Association of Dallas, Inc., at the Melrose Hotel.

A "brainstorming" session, moderated by John M. Morris, was the feature of one get-together. At another, Frank W. Wodrich, Texas Instruments, Inc., spoke on the subject "Keeping Management Informed." R. C. "Dick" Fast, District Two Vice president of the National Association of Purchasing Agents, was guest speaker at the last meeting.

The association will hold its Christmas dinner dance at the Riverlake Country Club on December 16.



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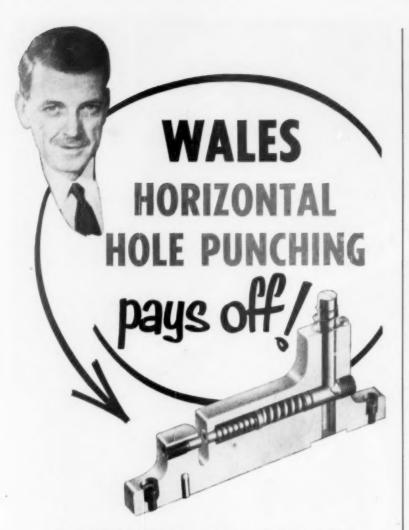
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### association news

#### **Program Aids**

To assist program chairmen in planming association meetings and company conferences, available film and other program aids will be listed in these columns from time to time.

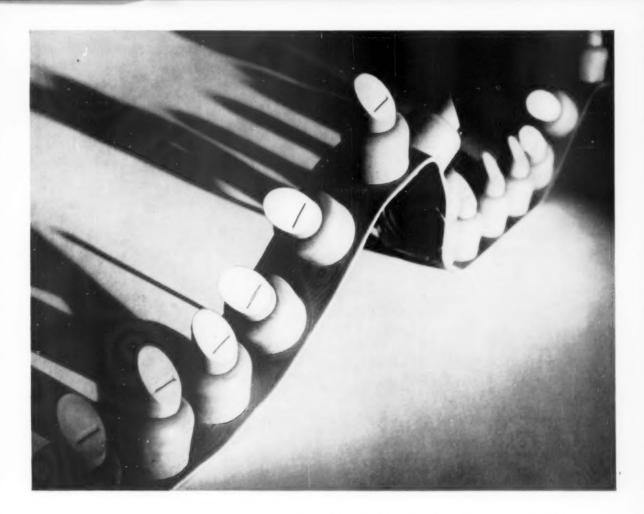
"Steel Valley". A black and white documentary on the manufacture and use of the rarer new super alloy steels, including stainless and titanium. Running time: 18 minutes. Sound. Available from Public Relations Department, Sharon Steel Corporation, Sharon, Pennsylvania.

"Air Brakes". A 16mm colorsound film illustrating the operation of components in both straight-air and air-over-hydraulic systems. Running time: 30 minutes. Write to Wagner Electric Corporation, 6400 Plymouth Avenue, Saint Louis 14, Missouri.

"Automotive Wheel Bearings". Sound slide film in color showing the care and handling of any of the five basic types of ball and roller bearings used to control the motion and alignment. Running time: 20 minutes. Available from Federal-Mogul-Bower Bearings, Inc., 11031 Shoemaker Avenue, Detroit 13, Michigan.

"Know Your Ropes". Technical film on the manufacture, construction and application of industrial wire rope. Running time:: 30 minutes. Available at no cost from The Colorado Fuel & Iron Corporation, P. O. Box 1920, Denver 2, Colorado.

"The Pallet System of Case Handling". Complete handling of Coca-Cola cases on pallets on the production line, in and out of storage. Black and white, sound. Running time: 10 minutes. Write to Mrs. Edith T. Lamont, The Yale & Towne Manufacturing Co., 11000 Roosevelt Blvd., Philadelphia 15, Penna.



#### what is it?

You could get stuck on this one, so we'll give you a hand. It's a strip of mucilage bottle spreader tops—fresh from the mold. This is one of hundreds of custom molded rubber parts manufactured by the Tyer Rubber Company.\*

Since 1856, Tyer has been working with practically every major industry, converting ideas into practical, workable, custom molded rubber products.

Preliminary discussion of your ideas or problems is followed by compound selection and mold design. Tyer Engineers will be glad to furnish complete details. Send coupon below.

\*Listed in Sweet's Product Design under section 2c/TY. Custom Molded Rubber Parts.

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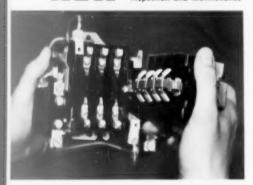
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ADJUSTABLE OVERLOADS Overload trip setting can be adjusted plus or minus 15% nominal heater rating

#### General Electric announces

## Size 0 and 1 Magnetic Starters— 42% Smaller in Size

General Electric now offers a new line of Size 0 and 1 magnetic starters that is 42% smaller than previous open forms and is built to the new NEMA ratings. The new starters with "snap-slide" construction provide easier inspection and maintenance because principal components snap or slide together. Completely new and radically different in design, this line of starters offers:

- wrap-around cover with spring latch—easily removed without tools for inspection
- · removable sides for greater accessibility
- straight-through wiring speeds installation
- · pressure-type terminals make wiring easy
- vertically-slanted contacts give higher tip pressure, reduce possibility of contact welding
- . long life "kick-off" spring provides clean break of contacts in any mounting position
- strongbox coil with Mylar\* insulated start wire for longer coil life
- overload relays adjustable for ±15% of trip setting
- · nine field modification kits for greater flexibility
- new maximum NEMA ratings up to 712 hp at 220 volts and 10 hp at 440 volts

Two additional features of the new magnetic starter are extremely quiet operation and lower inrush requirements of the coil. Sound absorbing material around the magnet lowers the operating noise level. Lower coil inrush current will allow you to use a 47% lower rated control transformer with this starter-saving you money and

Size 0 and 1 General Electric starters are available now in nonreversing, combination, reversing and multispeed forms. Contact your

nearest General Electric Sales Office or Distributor, or write Advertising Section 731-13 for the 20-page bulletin describing the line. Ask for GEA-6611. General Electric Company, Bloomington, Illinois.



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# purchasing people

### in the news

M. E. Loose, assistant purchasing agent, has been promoted to manager of the purchasing divi-



M. E. Loose

sion of the Ohio Oil Company, Findlay, Ohio. He succeeds **Earl** W. **Shoupe**, manager and purchas-



E. T. Snyder

ing agent, who has retired after 34 years with the company. E. T. Snyder, also assistant purchasing agent has been advanced to purchasing agent. Mr. Loose joined the company in 1921 in the general office. He progressed through production accounting, marketing development and sales departments. In 1948 he was appointed assistant to the purchasing manager. He became assistant manager of purchasing in 1952 and assistant purchasing agent in 1953. Mr. Snyder, the newly appointed purchasing agent, has been with the company since 1923. He has been a member of the purchasing department since 1925, where he advanced to assistant purchasing



E. W. Shoupe

agent in 1954. Mr. Shoupe began his career with the company in 1912 and remained until 1916. He returned to the organization seven years later. In 1924 he transferred to the purchasing department. He advanced through several positions in the department and was appointed purchasing agent in 1948. Five years later he became purchasing manager in addition to being purchasing agent.

Chrysler Corporation, Detroit, Michigan, has announced two appointments in the purchasing department. Melvin F. Auch has been named director-purchasing administration. Cecil C. Chauvin has been made director-purchas-



Melvin F. Auch

ing research. Mr. Auch will direct four sections of the purchasing department: management services office services, performance evaluation and procurement planning. Mr. Auch joined the corporation in 1944 as a supervisor in the Highland Park central routing department and a year later became supervisor of the war contracts department. In 1946 he was assigned to administrative staff of the vice president of organization in 1954. A year later he rejoined the corporate purchasing staff as an assistant general purchasing

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SUPER SMOOTH MG	for mounting, laminating, coating, printing. Typical use: laminated with foil in flip-top cigarette box.
UTILITY	for wrapping or interleaving a wide variety of products, and for waxing.
SPECIAL MG	can be tailor-made for you in weights from 15 to 28 lbs. with sulphate or sulphite pulps or special blends. Colors available on special orders. Relatively low making order

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Casting papers for plastics.

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- \* When visiting a friend in the hospital around mealtime, ever notice that little tab they plant in the platter to identify the diet. If it's paper, chances are it's a special Riegel bristol...clean, tough, water and grease resistant. On the happier side of life, the same Riegel papers are the country's most popular for dance tickets, hunting licenses, credit cards and things like that.
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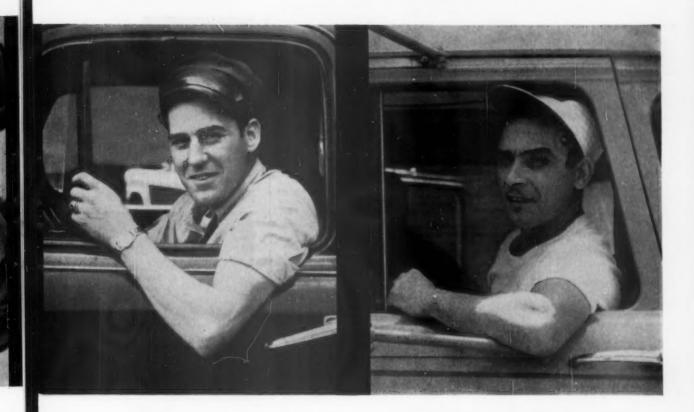
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## purchasing people

(Continued from page 242) agent. Mr. Chauvin will be responsible for developing and conducting a corporate-wide purchase analysis program and guid-



Cecil C. Chauvin

ing purchase research activities. He began his automotive career as a cost accountant with Chrysler Corporation of Canada, Ltd., in 1940. Prior to his present appointment he was manager of analysis in the corporate purchasing department.

Charles E. Ripka has been appointed purchasing agent of the Bridgeport, Connecticut plant of Heppenstall Company. Mr. Ripka replaces Harry von Hact, who has retired after 14 years of service with the company.

Pacific Semiconductors, Inc., Culver City, California, has moved its purchasing offices to new quarters at 10555 Virginia Avenue. Harry P. Rosen has been advanced to purchasing agent from senior buyer.

The production engine department of General Electric Company, Cincinnati, has realigned its manufacturing organization. A materials sub-section has been established within the manufacturing section. Paul Nichols has been named manager of materials.

For More Information Circle No. 375 on Inquiry Card—Page 17→ PURCHASING

#### USS CARILLOY Steels-

#### **GOOD FOR FRAZZLED NERVES**

caused by inability to get the service you need on quality alloy steel bars, billets, bar shapes and special sections A CALM PURCHASING DEMEANOR has a way of becoming de-calmed when the operating department is screaming for a special alloy analysis that was scheduled for delivery last week . . . or when production is in danger of being fouled up because a shipment of bars doesn't meet your quality requirements.

You can eliminate the frazzled nerves that ensue by going, in the first place, to United States Steel for alloy bars, billets, bar shapes and special sections, as well as all your flat-rolled alloy steels.



#### What is available in USS CARILLOY Steels:

There is a complete line of quality open-hearth and electric-furnace USS Carilloy Steels—ingots, blooms, billets, slabs, bars, bar shapes, spring flats, plates, sheets, strip, special sections, structural shapes, or any other form you need . . . in regular, aircraft, bearing, gun, firebox, and other qualities . . . quenched and tempered, annealed, normalized, stress-relieved, or with special heat treatment . . . hot-rolled, coiled, straightened, leveled, flattened, machine-cut, cracker-cut, torch-cut, sandblasted, oiled, pickled, or just about any way you need it . . . to meet your requirements for grain size, hardenability, analysis, cleanliness, magnaflux, and other specifications.

Metallurgical Assistance is always available from United States Steel on application and fabrication of USS CARILLOY Steels. This is another reason to make United States Steel your one-stop source for all alloy steels.

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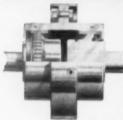
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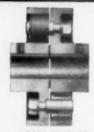






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> Essential Chemicals from Hudrocarbon Sources



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For More Information Circle No. 377 on Inquiry Card-Page 17

purchasing people

Appointment of Joseph P. Tumminaro as material director of the Tuner Division has been announced by Standard Coil Products Company, Inc., Melrose Park,



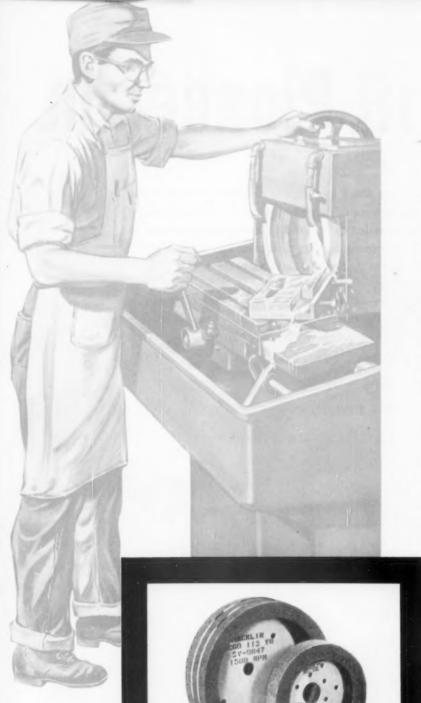
Joseph P. Tumminaro

Illinois. Mr. Tumminaro, in his newly created position, will consolidate production, purchasing and inventory control under one administrator. He joined the firm's headquarters in 1945 as an assistant to the personnel director, specializing in time and motion study. In 1955, he was placed in charge of production control of the Division which position he held until his new assignment.

E. D. Bullard Company, Sausalito, California, has announced the appointment of R. P. Barker as purchasing agent of the company. Mr. Barker joined the firm as office manager and assistant purchasing agent in 1953. James Carroll has been promoted to the position of expeditor. He has been associated with the company since 1947 and has held various positions in the shipping, stores and sales department. His new duties include incoming and outgoing orders to the company offices and distributors located franchise throughout the world.

For More Information Circle No. 378 on Inquiry Card-Page 17→

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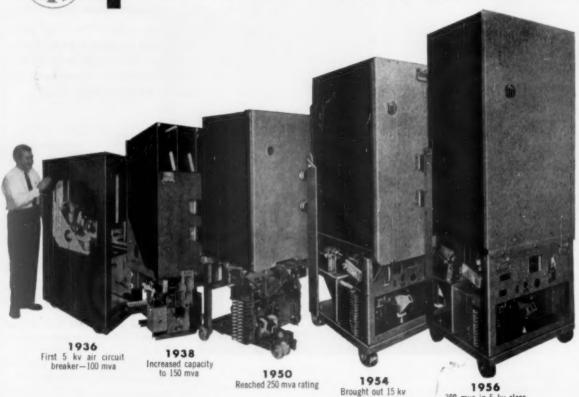
In 1936, I-T-E introduced the first 5 kv magnetic air circuit breaker and it has led the field in development of this type of equipment ever since. In the past 4 years alone, it has extended its line of 5 kv metal-clad switchgear to include the first 350 mva interrupting capacity air breaker and its line of 15 kv metal-clad switchgear to include the first 1000 mva air breaker.

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I-T-E CIRCUIT BREAKER COMPANY



air circuit breaker

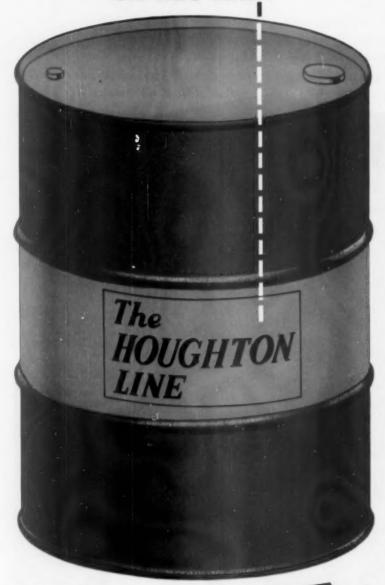
350 mva in 5 kv class

## Air Circuit Breakers



#### we put our reputation

#### ON THIS LINE!



Metal Working Products Paper and Textile Processing Products Lubricants - Packings

PHILLDELPHIA : CHICAGO - DETENT - SAN FELNETISCO

Ready to give you on-the-job service ...

For More Information Circle No. 380 on Inquiry Card-Page 17

purchasing people

George M. Brady has been promoted to manager of purchases for the American Oil Company and its subsidiaries, New York.



George M. Brady

Mr. Brady, who has been associated with the company since 1936, moved up from the position of assistant manager of purchases. He succeeds John A. Whitely, who



John E. Johnson

has retired after 52 years in the petroleum field, 38 of which were spent with the company and its predecessors. John E. Johnson has been advanced to the position of assistant manager of purchases to succeed Mr. Brady. Previously Mr. Johnson had been a buyer in the purchasing department.

For More Information Circle No. 381 on Inquiry Card—Page 17-> PURCHASING



Grapes are stored at 32°F, potatoes at 40°F. Anhydrous ammonia, carried in SPANG CW Steel Pipe, is used as the refrigerant.

Mr. George Eckert, standing in one of the storage cooler rooms, reports on performance of SPANG CW Steel Pipe at Bakersfield Ice & Cold Storage Company. Despite acid action and earthquake vibrations, no replacements have been necessary in almost 15 years service.

# "ACID ACTION HAS FAILED TO MAR THE PERFORMANCE OF SPANG CW STEEL PIPE IN OVER 14 YEARS SERVICE"

says Mr. George C. Eckert, Vice President and Manager, Bakersfield Ice & Cold Storage Company, Bakersfield, Calif.

"Repeated coatings with sulphuric acid film, occasional earthquake vibrations, and a constant flow of anhydrous ammonia have all failed to damage our Spang CW Steel Pipe, installed in 1942. In fact, no piping replacements have been necessary during the almost 15 years of continuous operation to which the pipe has been subjected," reports Mr. Eckert.

"Last year we stored 85 carloads of grapes. The control of bacteria and insect life on grapes requires the weekly use of sulphur dioxide gas which is sprayed into the storage room, The gas changes into sulphuric acid when it strikes moisture, forming a highly corrosive film on the pipe surface. This acid action, however, has failed to mar the performance of the Spang CW Steel Pipe which has endured this condition for more than 14 years, and is still giving good service," commented Mr. Eckert.

#### THAT'S SPANG QUALITY CONTROL AT WORK!

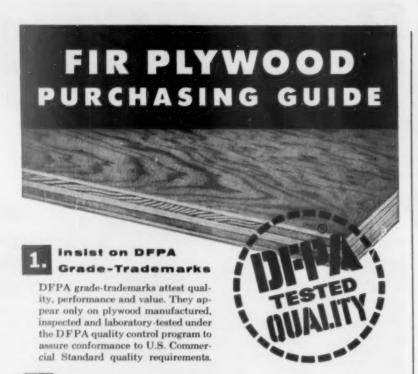
Quality Control in manufacturing builds long years of service into every foot of Spang CW Steel Pipe. Careful attention to temperatures and forming and welding pressures produces in Spang that extra quality that means extra service for you.

Prove to yourself what Spang Steel Pipe can do for you. Make your next pipe order Spang CW Steel Pipe. Your nearby Spang distributor will be glad to serve you.



#### SPANG-CHALFANT

Division of the National Supply Company General Sales Offices two Gateway Center, Pittsburgh, P.a. District Sales Offices: Atlanta, Baston, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis



#### 2. Choose the right grade for each job

DFPA quality-tested fir plywood comes in two types: 1. Exterior (waterproof glue for permanent outdoor exposure); 2. Interior (moistureresistant glue) for use indoors, temporary outdoor uses and sheathing. Within each type are appearance grades to meet the exact needs of any given job. Most popular grades are shown below: (other grades including panels made of other western softwoods, also available)

TYPICAL USE	EXTERIOR-TYPE (Waterproof glue)	INTERIOR-TYPE (Moisture-resistant glue		
Where appearance of both sides important. Cabinet doors, single thickness walls, etc.	®EXT-DFPA·A-A	(INTERIOR · A-A-DFPA		
Where only one side will be seen. Siding, paneling, signs, fixtures.	PlyShield® (A-C)	PlyPanel® (A-D)		
Special concrete form grades. Both faces sound, solid, smooth.	Ext. PlyForm® (B-B) Meximum Re-use	Int. PlyForm® (B-B) Multiple Re-use		
Unsanded structural and maintenance panel. Sheathing, crating, temporary screening.	Exterior Glue PlyScord® (C-D)	PlyScord® (C-D)		

SIZES: Standard fir plywood thicknesses are from  $\frac{1}{4}$ " through  $\frac{3}{4}$ "; standard size is 4' wide, 8' long. Other thicknesses and sizes are also available, including "king-size" scarfed panels up to 30' and 50' long.

TEXTURED FIR PLYWOOD — Fir plywood comes in several smart textured panels for special decorative applications such as siding, paneling, displays and fixtures. These include Texture One-Eleven Exterior plywood (deep parallel grove pattern, shiplapped edges) and panels with attractive brushed, striated, or embassed surfaces.

OVERLAID FIR PLYWOOD — is Exterior fir plywood with resin-fiber overlay permanently fused to one or both sides of panel. High density is hard, glossy, abrasion-resistant (use for long-lasting signs, shelving, concrete forms); Medium density overlaid plywood is smooth, with texture similar to drawing paper (ideal paint base for signs, fixtures, siding).



FREE WALL HANGERS — Handsome 18"x33" wall hanger. Handy fir plywood grade-use-specification guide. Order one for everyone in your firm who specifies fir plywood. Also available, specification portfolio. Includes detailed description all grades, sizes, specialty panels, Commercial Standards requirements. Offer good USA only. Douglas Fir Plywood Assoc., Tacoma 2, Wash., Dept. 185.

purchasing people

Nelson M. Camp, in charge of purchasing for the Chase Metal Works division of Chase Brass & Copper Company, Waterbury, Connecticut, has severed his connections with that firm to accept a position in the purchasing department of Kennecott Copper Corporation, New York, parent concern of Chase. Mr. Camp has been with Chase since 1938 in several different capacities. In 1947 he was assigned to the purchasing department, where he has been for the past ten years.

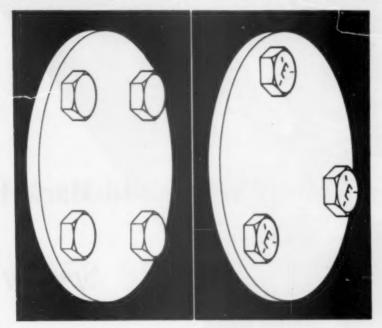
**Donald T. Daegling**, second from left, with 41 years of service, and **Roderick W. Ringrose**, third from left, with 50 years of service,



have retired as division purchasing agents with Standard Oil Company (Indiana). With them are Edward J. Bullock, left, retired purchasing vice president, and Donald A. Monro, right, director of purchases.

Clifford J. Gurney has been named to the newly created post of coordinator of trade relations in the purchasing department of the same company. Mr. Gurney, associated with Standard Oil in the purchasing department since 1920, will coordinate trade relations work with purchasing and sales departments.

#### ECONOMIC FACTS ON FASTENERS



#### SIMPLE CHANGE SAVES UP TO 40% ON FASTENER COSTS

- High strength bolts deliver more "holding power" per dollar
- Savings in production can also be realized

Figure the cost of fasteners as if you're buying clamping force to hold together an assembly. This way, \$1.65 worth of "holding power" in machine bolts costs you only \$1.50 if bright cap screws are used . . . but only \$1.00 in high carbon bolts.

Viewed another way, it means that the stronger fastener can be smaller for a given application, and so costs less. Or it can mean using fewer fasteners.

Either way, you save. On direct fastener costs; on manufacturing. With smaller fasteners, there are smaller holes to drill (or maybe you can even go to punching). With fewer fasteners, there are fewer holes to fill. (In the sketch above, fastener assembly time would be cut one-fourth.)

Case History: Where an application is suited to high strength bolts the savings can be substantial.
 One Midwest farm equipment plant that standardized on them saved \$12,000 the first year, \$28,000 the second.

Manufacturers willing to review their requirements with an RB&W Fastener Man may find it rewarding. He's a technical specialist who can help you save money in assembling your products with standard fasteners. Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N.Y.



Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. Additional sales offices at: Ardmore (Phila.), Pa.; Pittsburgh; Detrolt; Chicago; Dallas; San Francisco. Sales agents at: Milwaukee; New Orleans; Denver; Fargo. Distributors from coast to coast.



#### Spin-Lock Screws solve assembly problem

The designer specified countersunkhead screws to be used in a particular casting. The production man had to stake these in to anchor them. But this meant extra operation, made screw removal damaging and difficult.

The answer was found in Spin-Lock screws. These have hardened "ratchet-action" teeth that bite in when tightened, take 20% more torque to loosen than to tighten, can be reused. Send for Bulletin.



#### Silicon bronze fasteners combine desirable features

Silicon bronze offers the highest conductivity in fasteners able to withstand high stresses. It resists corrosion, stays free from season cracking, too. It makes ideal fasteners for electrical use where tensile strength is important; or for corrosive environments.

One of the first to develop such fasteners, RB&W cold works them for tensile strength and for clean, well formed threads that don't seize. Oval boits, hex bolts and nuts, and U bolts available. Specials can be developed.

RB&W FASTENERS-STRONG POINT OF ANY ASSEMBLY

For More Information Circle No. 383 on Inquiry Card-Page 17

For Mine-to-Market Specify PHELPS DOBGE COPPER WATER TUBE

#### Dependability That Builds Your Reputation

#### PHELPS DODGE COPPER WATER TUBE

Packaging that's easy to stock and use.

Dependable quality that starts with highest grade copper from Phelps Dodge's own open-pit mines and is carefully controlled during fabrication.

Color-coding of tube in straight lengths for quick identification in the stockroom and on the job.

Mill depots strategically located to service distributors without delays.

Tube properties that are unsurpassed, including precise uniformity of wall thickness.

For the name of your nearest Phelps Dodge distributor, write Dept. B4, Phelps Dodge Copper Products Corporation, 300 Park Avenue, New York 22, N. Y.



#### PHELPS DODGE COPPER PRODUCTS

CORPORATION

SALES OFFICES: Atlanta, Birmingham, Ala., Boston, Buffalo, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Fort Wayne, Greensbaro, N. C., Houston, Jacksonville, Kansas City, Mo., Los Angeles, Memphis, Milwaukee, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, Portland, Ore., Richmond, Rochester, N. Y., San Francisco, St. Louis, Seattle, Washington, D. C.



#### JEWEL BRAND ABRASIVE BELTS

There's a JEWEL BRAND Velvet Joint Abrasive Belt in the precise grit and bond to meet every need . . . for grinding, smoothing, polishing metal, plastic, wood, leather or rubber. Super adhesives, painstaking workmanship, plus the Velvet joining method, add hours to the productive life of JEWEL BRAND Abrasive Belts. Conveniently located warehouses assure prompt delivery. Uniformly-high

standards of quality assure dependable results. For complete information, write Abrasive Products, Inc., 523 Pearl Street, South Braintree 85, Mass.

> Smoothing the way where the going is rough

Frequently JEWEL BRAND salesmen are able to provide unusual service in supplying abrasives because their plant is neither too big to lose the personal touch nor too small to lock emergency capacity.

Abrasive Products, Inc.

For More Information Circle No. 385 on Inquiry Card-Page 17

#### purchasing people

Edward F. Bauman has been promoted to director of purchasing staff activities for Federal-Mogul-Bower Bearings, Inc., Detroit, Michigan. In this position, Mr. Bauman heads a new corp-



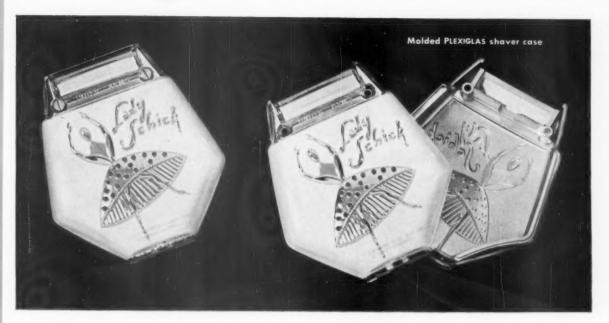
Edward F. Bauman

orate staff division responsible for developing and supervising general purchasing policies and coordinating purchasing activities at the company's line divisions. He has been director of purchases for the division since 1940 and has been associated with the company for 32 years. Mr. Bauman's experience includes several years as supervisor of pricing and estimating. He was also responsible for government contacts on materials allocations during World War II.

The appointment of Harlan E. Eastman as purchasing agent has been announced by the Helipot Division of Beckman Instruments, Inc., Newport Beach, California. Mr. Eastman joined the organization following more than 16 years in the manufacturing and electronics field. For the last 13 years he has been a manager of purchasing for the Clary Corporation, San Gabriel, California. He is a member of the Los Angeles Purchasing Agents Association.



#### Plexiglas...hardworking and handsome



Hardworking in its durability—its resistance to impact, discoloration, dimensional change, heat, most chemicals, and prolonged outdoor weathering . . .

Handsome in its brilliant, gleaming colors—or water-white clarity that gives depth and sparkle to back surface paints and metallized coatings...

That's PLEXIGLAS\*, the acrylic plastic that can add sales appeal to *your* product. Our design staff and technical representatives will be glad to help.



Chemicals for Industry

#### ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

Canadian Distributor: Crystal Glass & Plastics, Ltd, 130 Queen's Quay East, Toronto, Ontario, Canada.

For More Information Circle No. 386 on Inquiry Card-Page 17

DECEMBER, 1957



#### developments

#### Purchasing Seminars Strengthen Vendor Relations

A new phenomenon seems to be appearing in the business picture. And that is a tendency for large industrial concerns to bring together a segment of their suppliers for a discussion of common problems. General Electric recently sponsored such a seminar.

The General Electric Purchasing Seminar held at the Sheraton Hotel in Philadelphia was attended by approximately 400 suppliers of their Missile and Ordnance Systems Department (a prime contributor to the missile programs of the three services). The purpose of the seminar was to assemble a large group of M&OSD suppliers and to discuss the peculiar aspects of working with a defense business.

During the seminar, vendors heard what the department expects of suppliers. In addition to stringent delivery and quality requirements, vendors were asked to remain flexible while doing their sub-contracting work, because changes in equipment specifications, particularly in the new missile field, can be expected.

The seminar was conducted in five individual sessions. The topics included:

How To Do Business With M&OSD

Expediting

Quality Control (Materials and Processes)

Quality Control (Receiving Inspection)

Subcontracting



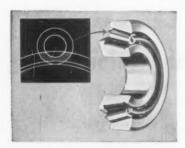
J. P. Benzie, Manager, Contract Purchasing, welcomes the subcontractors to GE.



Vendors take notes on some of the purchasing information displayed on posters throughout the meeting area. Organization charts and sub-operations were also displayed.



#### Tomorrow's "dream" is our job today!



#### HIGHER FLANGE IMPROVES ROLLER ALIGNMENT

As shown by the gray area above, the higher flange provides a large two-zone contact area for the roller heads. This greatly reduces wear-practically eliminates "end play". Larger oil groove provides positive lubrication.

There's more to the car of tomorrow than just futuristic styling! Automotive engineers are working to perfect completely new power plants—like turbine engines—to achieve yet-unheard-of performance and economy! And they demand bearings that are as advanced as their thinking. This is no new challenge to Bower engineers. A glance at the design features listed at left will tell you a few of the many original Bower contributions to bearing performance which have reduced bearing maintenance and failure to a practical minimum. There are many more in the making. If your product is one which needs advanced bearings today plus realistic planning for the future, specify Bower. There's a complete line of tapered, straight and journal roller bearings for every field of transportation and industry.

BOWER ROLLER BEARING DIVISION FEDERAL-MOGUL-BOWER BEARINGS, INC. • DETROIT 14, MICHIGAN



BOWER

For More Information Circle No. 387 on Inquiry Card-Page 17

DECEMBER, 1957

n

il

more proof of *Curpenter* quality . . . at no extra cost Reverse bend is made on one end, doubling the pipe back on itself. Machining is then performed on the doubled back part of the pipe as shown in photo.

#### **Carpenter** Stainless Pipe shows fabrication savings!

Only the highest quality stainless pipe and tubing with outstanding uniformity in properties and dimensions can take this punishing reverse bend (see sketches) and succeeding machining operations. The part is made from 2" Carpenter Schedule 40 pipe, and must meet close tolerance requirements consistently.

If more of this kind of proof is needed, call your nearest Carpenter Distributor today. He has the service and stock to serve you right!



You Can Buy

# Portable Cord with Complete Confidence

When your electrical supplier sells you WB DYNAPRENE you can be confident that you are getting a premium cord at a reasonable price.

WB DYNAPRENE, 14/2 SO and larger is listed by the U. S. Bureau of Mines and Pennsylvania Bureau of Mines, identification number P-118 BM.

For your convenience this tough, long-lasting cord is put up in 250 ft. spools in sizes up to and including 16/3.



Write for complete
WB Portable Cord
catalog . . .
there is no charge.



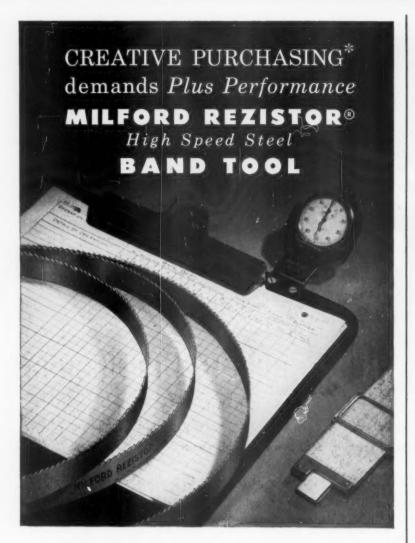
Well Built Wires Since 1899



WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT

For More Information Circle No. 389 on Inquiry Card-Page 17



NOW AVAILABLE FOR IMMEDIATE DELIVERY . . . the REZISTOR Band Tool is specially designed to cut stainless steel and other tough ferrous alloys on your heavy-duty band saw machines. This red-hardness high speed steel blade cuts many times faster . . . lasts far longer than any carbon steel band. It cuts consistently smoother and straighter than other cut-off methods . . . and chip loss of expensive metal is greatly reduced.

When you buy MILFORD REZISTOR Band Tools, you are purchasing performance that will create profits for your company. Prove this for yourself; call your MILFORD distributor now.

\*The modern concept of PURCHASING as a positive, profitcreating function.



BUY FROM YOUR MILFORD DISTRIBUTOR . . . a local businessman who stocks the tools and equipment you need. You'll SAVE TIME, CUT BUYING COSTS and REDUCE INVENTORIES.

THE HENRY G. THOMPSON & SON COMPANY • NEW HAVEN 5, CONNECTICUT Saw Blade Specialists for Over 80 Years

HACK SAW AND BAND SAW BLADES . HOLE SAWS . GROUND FLAT STOCK
For More Information Circle No. 390 on Inquiry Card—Page 17

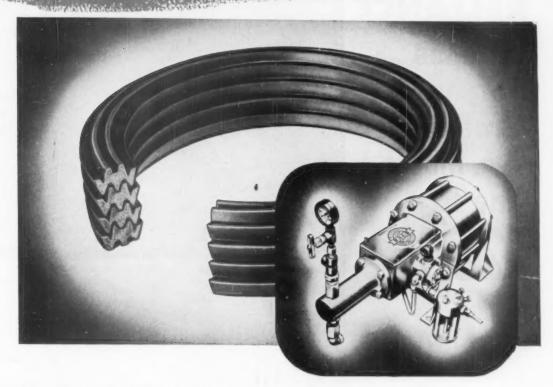


The Permacel Tape Corporation has changed its name to Permacel-LePage's Inc., New Brunswick, New Jersey. The new name reflects the increasing diversity of the company product line. Permacel, a Johnson & Johnson company, acquired LePage's in the spring of 1956. The acquisition added a number of new adhesive products to the more than 400 different types of pressure sensitive tapes and other products manufactured by the corporation.

Hercules Powder Company, Wilmington, Delaware, has announced it will double its capacity for the production of urea at its Hercules, California plant. Two months ago the company disclosed plans to construct a 10,000 ton-a-year facility to make urea in solution at a new plant to be built adjacent to existing anhydrous ammonia facilities at Hercules. In response to increased demands from users of urea, the company has approved expansion of the plant under construction so that it would have a capacity of 20,000 tons a year. Using the Swiss Inventa process, it will have the first plant west of the Mississippi, and the third in the nation to produce urea by this method. Completion of the expanded urea facility is expected in the fall of 1958. The urea unit will utilize ammonia and carbon dioxide as raw materials, both available at the existing plant.

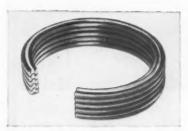
The Colson Corporation, Elyria, Ohio, manufacturer of material handling equipment and industrial and institutional wheeled products, has opened its new caster plant in Jonesboro, Arkansas. The company's complete line of 12,000 industrial casters will be produced in the 89,000 square foot plant.

#### J-M Uneepac®does it again!



"Very satisfactory sealing service against wide variety of fluids and pressures up to 5,500 psi"

says Black, Sivalls and Bryson, Inc. makers of BS&B Glycol Pump



Uneepac comes in two types. Shown here is design for flange widths up to \(\frac{1}{2}''\) which is used in BS&B Glycol Pump. Large illustration above shows design for flange widths over \(\frac{1}{2}''\).

Chalk up another success story for Uneepac—Johns-Manville's automatic ring packing. In the BS&B Glycol Pump, fluids handled include triethylene glycol, diethylene glycol, gasoline, and various types of oils, alcohols and petroleum treating chemicals. Working pressures range from 125 psi to 5,500 psi with average operating pressures at 3,000 psi. Yet despite these rugged service conditions, Uneepac has delivered—in Black, Sivalls and Bryson's own words—"very satisfactory service."

Many other packing users have acclaimed J-M Uneepac for its long, troublefree service. Each ring is a complete packing unit. Fewer rings are needed than ordinarily required and stuffing box size can be reduced to the minimum. Each ring centers itself automatically on the preceding ring to simplify installation. This exclusive design also permits fluid pressure to act upon each lip individually and protects lips from excessive gland pressure.

J-M Uneepac comes in a wide range of styles and sizes for many rod and plunger applications. For further information write Johns-Manville, Box 14, New York 16, N. Y. In Canada, Port Credit, Ontario,

#### Johns-Manville PACKINGS, GASKETS and TEXTILES



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#### RELIANCE

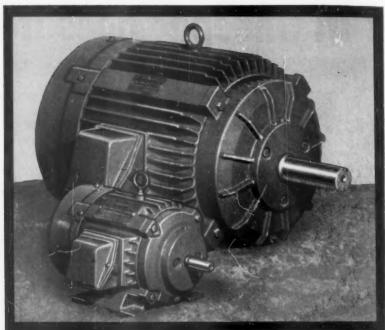
# extends Totally Protected A-c. Motor line to 125 HP.

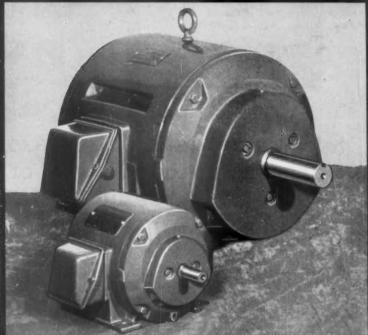
Reliance's proven Totally Protected design is now being extended thru 125 horsepower.

Now Totally Protected Motors will be available to you from 1 thru 125 hp. in new NEMA ratings.

Immediate delivery from stock today, 1 to 50 hp. Contact your Reliance representative for shipping schedules on other ratings.

B.1573





Write or call today for further information



RELIANCE ENGINEERING CO.

DEPT. 2512-A CLEVELAND 17, OHIO
CANADIAN DIVISION: WELLAND, ONTARIO
Sales Offices and Distributors in principal cities



IN BRAINARD STEEL TUBING

QUALITY IS ASSURED

As a division of Sharon Steel, Brainard can be sure the steel used for the fabrication of tubing has been developed to meet their own exacting standards. From mine to finished product, Brainard Welded Steel Tubing has the extra quality that can come only from an integrated industry.

Brainard Electric Welded Steel Tubing, from ½" to 4" in diameter, is also available in squares, rectangles and many special shapes. Brainard Tubing can be furnished swedged, pressure tested, or fabricated.

For mechanical welded steel tubing of top value, buy Brainard.



#### SEND FOR THIS BOOKLET

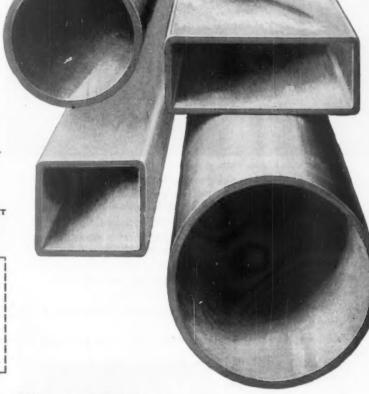
For complete information on Brainard's Mechanical Welded Tubing.

BRAINARD STEEL TUBING Griswold St., Warren, Ohio

Oriswold St., Warren, Onlo

Address\_\_

City\_\_\_\_\_ Zone\_\_\_ State\_\_\_



BRAINARD

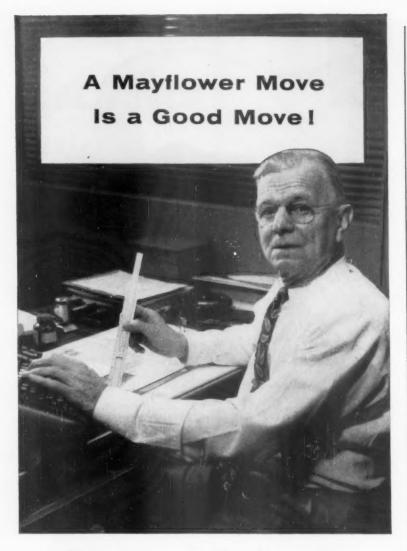
#### **Brainard Steel Tubing**

Brainard Steel Division, Sharon Steel Corporation
Griswold Street, Warren, Ohio

400

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DECEMBER, 1957



Whether you're moving one of your company's research experts, a salesman, an engineer or a top executive, "a Mayflower Move is a good Move!" That's what scores of Mayflower customers tell us every day.

One satisfied shipper, for example, after a move from Boulder, Colorado to Wichita, Kansas, wrote us:

"It would be impossible to improve upon the service we received. I appreciated, especially, the personal interest the van operator displayed in each article moved."

Next time you have company personnel to move, make a good move. Call Mayflower!

AERO MAYFLOWER TRANSIT COMPANY, INC. . INDIANAPOLIS



AMERICA'S FINEST LONG-DISTANCE MOVING SERVICE

For More Information Circle No. 394 on Inquiry Card-Page 17



Stauffer Chemical Company, New York, will enlarge its Richmond, California, plant to produce 50,000 tons annually of pelletized single superphosphate. The new plant will use a unique process developed by company engineers, in cooperation with a Southwestern engineering firm, and is expected to be in production about March, 1958. To cost about \$350,000, the new plant will supply single superphosphate, widely used by Western growers, in a uniform, pelleted, dust-free form.

Acquisition of the precision products division of Gruen Industries (formerly Gruen Watch Co.) of Cincinnati, has been announced by the KDI Corporation, Rochester, New York, automation equipment manufacturer. Production will continue at the Cincinnati plant, which specializes in the manufacture of small precision parts for companies like IBM and Bendix. The acquired division will be known as the Precision Products Co. of Cincinnati, a division of the KDI Corp.

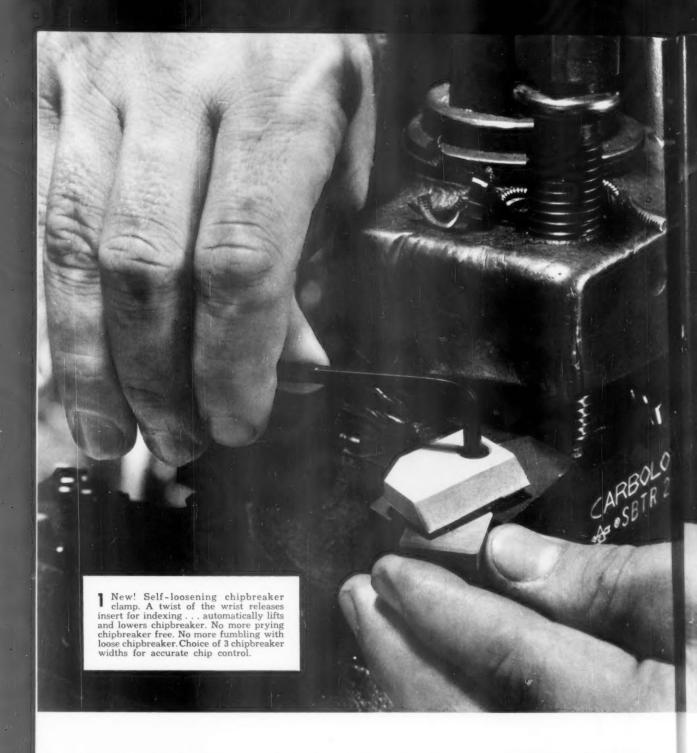
The A. K. Allen Co., Inc., formerly of Brooklyn, New York, manufacturers of air cylinders, air valves and indexing dial feed tables, has announced its removal to new larger quarters at 255 East 2nd Street, Mineola, New York.

Complete facilities for the production of quartz tubing have been installed at the Fairmont, West Virginia, plant of Westinghouse Electric Company, Pittsburgh, Pennsylvania. Marking the entry of the firm into this field, the facilities will be adequate to fill all the company's needs for this material and it is planned to offer supplies of quartz to other users. The Fairmont plant already produces all glass used in the manufacture of the company's fluorescent lamps.

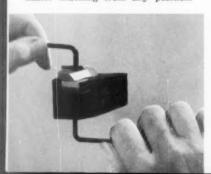


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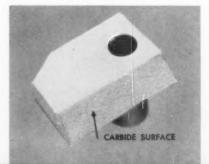
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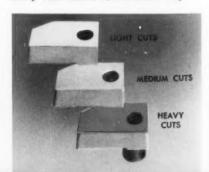
2 New! Setscrew accessible from top or bottom! Screw easily reached when holder is upside down or on its side. Easier indexing from any position.



**3** New! Unique carbide-surfaced chipbreaker. New method bonds carbide coating directly to chipbreaker. Ends all possibility of braze failure.



4 New! Three color-coded chipbreakers. Choice of three widths: yellow for light cuts, silver for medium cuts, red for heavy cuts. Makes identification easy.





# ANNOUNCING THE ALL-NEW CARBOLOY. LIFT-O-MATIC TOOLHOLDER

Only toolholder on the market with these 6 advanced design features

Indexes faster, easier — from any position. Setscrew on Carboloy Lift-O-Matic Toolholder can be turned from either top or bottom. Even if the holder is upside down, or on its side, the setscrew is always easily accessible.

What's more, the clamp and chipbreaker are in one piece — and rise automatically when the setscrew is loosened. There's no time wasted in fumbling with the chipbreaker or prying it free.

Reduces set-up time, speeds up production. Because Carboloy Lift-O-Matic Toolholders can be set up faster and in-

dexed right in the machine, downtime is reduced – you get more production.

Because of the new holder design and harder steel shanks, you get closer tolerance production . . . less scrap loss.

17 styles in 8 sizes—stocked for immediate delivery. Lift-O-Matic Toolholders are now at your local Authorized Carboloy Distributor. Call today; his name is in the Yellow Pages. Or, for new Lift-O-Matic Toolholder Catalog, write: Metallurgical Products Department of General Electric Company, 11173 E. 8 Mile Street, Detroit 32, Michigan.

CARBOLOY.

GENERAL ( ELECTRIC

**5** New! Fewer parts to replace or stock. Holders use fewer parts. And all are standardized to cover widest range of applications. Means reduced inventories.



6 Insert clears top of the shank. Stops chipping of fresh cutting edges against walls of insert pocket. Inserts are positively clamped; clamp never touches shank.





NEW! TRANSPARENT PACKAGES FOR CARBOLOY INSERTS

New plastic package makes it easy to see what's inside...easy to pick out insert.

Big Run Deadline



Big run jobs have you on the run? Take a tip from leading firms and consult Carey. Round-the-clock operation, roll fed presses, inventory roll stock and sheeting equipment meet and service any quality demand at substantial savings. Why wait for deliveries when you can call Carey Press...ask for

Art Friedman, Sales Manager . CH 4-1000

#### 62 YEARS OF ACHIEVEMENT

INSTRUCTION BOOKLETS
INDUSTRIAL CATALOGS
COMPANY PUBLICATIONS
PACKAGE INSERTS
PRODUCT CIRCULARS
REFERENCE MANUALS
DATA BOOKS AND DIARIES
PHOTOGRAPHIC BOOKS



CAREY PRESS CORP. • 406 W. 31st ST. • N. Y. 1 For More Information Circle No. 397 on Inquiry Card—Page 17

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# "CAT and DOG" MECHANICAL RUBBER GOODS

ANY QUANTITY...
NON-STANDARD ITEMS
MADE TO YOUR SPECS
...BUT FAST!

Look no further for mechanical rubber goods odds and ends. We thrive on "CATS AND DOGS"... swiftly fill custom orders large production-run companies must omit or postpone. No order too small... no order too large!

#### Molded . . . Extruded or Cut!

Most anything in natural or synthetic rubber—compounded by our own chemist—molded, extruded or cut to Government, ASTM, SAE or private specifications. Your molds designed and made at minimum cost. For those "CAT and DOG" rubber goods you need now... phone, wire or write us today. You'll get the results you want...but fast!

PHONE ATlantic 9-5501

"CAT and DOG" Division

ROYAL RUBBER COMPANY
DEPT. 1202 SOUTH BEND, INDIANA
\* Division of THE RUBBER SHOP, Inc.

For More Information Circle No. 398 on Inquiry Card—Page 17

# industry



View of grading, sorting and testing laboratory.

The Indiana Diamond Dust Reclamation Company has been acquired by the LeVita Metal Alloy Company and the LeVita Industrial Diamond Company. The company which was originally formed in 1942 in Fort Wayne, Indiana and subsequently moved to Orlando, Florida, will operate from its location at 42 East Alexandrine, Detroit, Michigan. The company is able to reduce quantities of 10,000 pounds of diamond containing residues per month through its primary operation, while it is able to handle 50,000 carats of reclaimed diamond per month through its finishing laboratory. In spite of the large capacity of reclamation, the facilities of the company are at the present time used to capacity. The firm expects to increase the available facilities constantly to be able to service additional accounts.



Hydraulic press brake is used to form sections of Kaiser aluminum dome auditorium at Globe

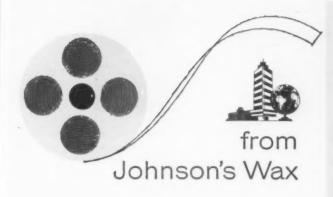
Iron Construction Company, Norfolk, Virginia. Sunburst pattern consisting of 2 series of radial creases on surface of each sheet is impressed by the brake. Intersection of creases gives concave surface. Press brake then flanges the four edges. Each aluminum sheet .081" thick of 7' x 13' is worked a total of 20 times for creasing and flanging. The 400-ton hydraulic press brake manufactured by Pacific Industrial Manufacturing Company, Oakland, California, had the size and versatility to handle both the creasing and flanging operations. Globe Iron also uses it for curving T1 high alloy steel in making vanes. The Pacific handles the many shapes and forms the company is called on to produce in its contract shop operation.



Single-faced pallets of steel coil are stacked in bulk storage racks of Marchant's storage area by automatic docker.

The problem of handling materials in a multi-floor operation has been solved by the Marchants Calculators, Inc., Okland, California, by the acquisition of an automatic docker model FFE-30 and a skylift model FF-10, manufactured by Automatic Transportation Company, division of the Yale & Towne Manufacturing Company, Chicago, Illinois. Every day the trucks service four separate departments located on three floors, performing industrial gymnastics with varied load weights in various shapes and sizes to diverse work areas. Principal function of the heavier truck, the docker, which has a lifting capacity of 3,000 pounds is to unload motor trucks making deliveries of raw materials and components used in the manufacture of the calculators.

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# NEW COLOR FILM ON FLOOR CARE!

"From Start to Finish" is a must for all maintenance men

"From Start to Finish" is a full-color movie that shows the best way to clean and wax a floor. It presents both the "how" and the "why" of cleaning and waxing, with just enough entertainment to keep any audience alert.

You'll want your men to see this Johnson film. It's easy to arrange. Talk with your local Johnson's Wax distributor. He can set up a complete training session which can include: 1) a showing of the film; 2) a questions-and-answers period... with the answers given by a factory-trained Johnson's Wax representative; 3) demonstrations of floor care techniques with opportunities for your men to participate; 4) product demonstrations with emphasis on how specific problems faced by your crews can be solved; 5) helpful literature on floor care.

If, for any reason, you are unable to arrange a showing of "From Start to Finish" locally, just drop the coupon in the mail.







S. C. Johnson & Son, Inc. Maintenance Division, Dept.P-127, Racine, Wisconsin

I would like to arrange a floor care training session including a showing of the film "From Start to Finish."

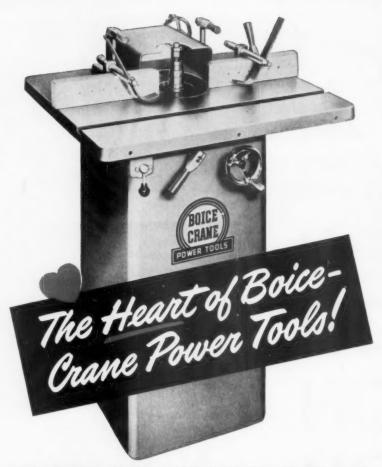
Please send "HOW TO CARE FOR YOUR FLOORS" booklet.

Name\_\_\_\_

Address

City\_\_\_\_\_State\_\_\_\_

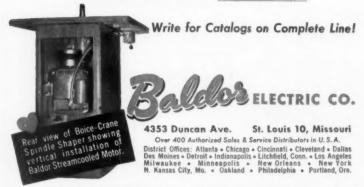
For More Information Circle No. 399 on Inquiry Card-Page 17



#### **BALDOR STREAMCOOLED MOTORS**

For years famous Boice-Crane Power Tools have enjoyed a reputation for faultless performance. And for years, like hundreds of other leading manufacturers, Boice-Crane has specified and depended on Baldor Streamcooled Motors to maintain its enviable prestige.

If customers demand this kind of superior performance from <u>your</u> equipment, it will pay you to consult Baldor. Experienced engineers are available to help take the kinks out of all your knotty motor problems . . . without obligation!



For More Information Circle No. 400 on Inquiry Card-Page 17



Construction of the new Westinghouse Electric Corporation's multi-million-dollar power circuit breaker plant in Trafford, Pennsylvania will begin in early 1958. The plant will be a one-story structure with a total of 241,000 square feet of manufacturing space. The building will be comprised of seven bays—one of which will be 60 feet high. Full operation with about 950 employees is expected by 1959.

ш

The Tubular Products division of The Babcock & Wilcox Company, Beaver Falls, Pennsylvania, plans to expand and modernize its alloy and stainless steel making facilities with the addition of a new electric arc furnace and associated equipment. The new facilities will be located near an existing extruded shapes fabrication building owned by the company in the Koppel, Pennsylvania area. Completion is scheduled for late 1959.

Superior Tube Co., Norristown, Pa., has broken grounds for a new office building and mill addition at its general offices and main plant on Germantown Pike. With an estimated cost of about \$2,000,000, the construction is part of a \$5,000,000 expansion program which began in 1956 and is scheduled for completion in 1958. It is the largest expansion in the company's history.

Atmosphere Control Co., Inc., Philadelphia, Pa., has announced the founding of a new division which will be known as Prototype Design and Manufacturing Division. It will handle individual and production runs of spinning up to 92 inches in diameter up to ½ inch thickness in aluminum, brass, bronze, rolled steel and stainless steel. Frances M. Corney has been named director of the new division.

For More Information Circle No. 401 on Inquiry Card—Page 17→ PURCHASING



#### "Spending a mickle wisely can make a good muckle."

The canniest Purchasing Agents are the men who keep the sharpest eye on the consistent quality of all materials offered. No accounting machines can supplant their mature judgment in the market place. They must know the suppliers who can be relied upon for rigid adherence to specifications, dollar for dollar value, and on-time deliveries.

Experienced Purchasing Agents do not risk losing customers by sacrificing quality to expediency. The wisest spenders know that all grades of B&W Tubing save their company money—tubing quality controlled to specific requirements.

When it comes to which B&W Tubing is best for the job—carbon, alloy or stainless steel; the best methods for fabrication of mechanical or pressureresisting parts—before ever an order is signed, Purchasing Agents know that Mr. Tubes, B&W's nearby representative, is ready with the latest money-saving information.

The Babcock & Wilcox Company, Tubular Products Division, Beaver Falls, Pa.



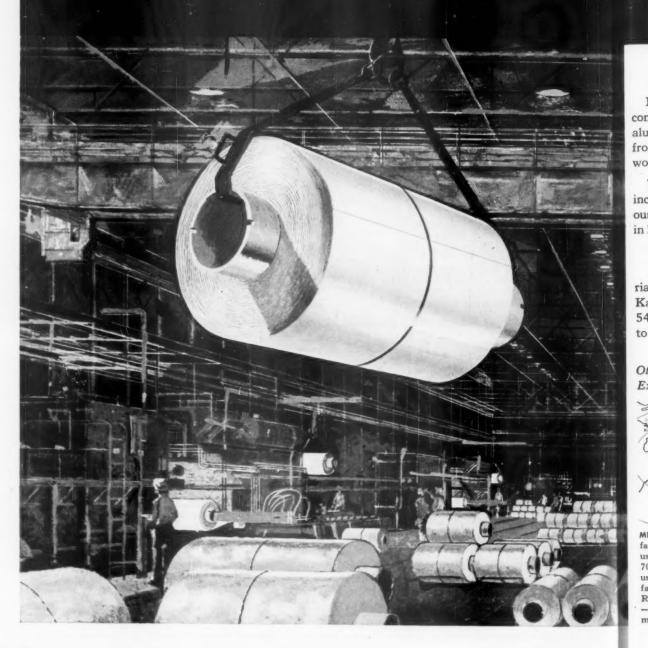
P6

Seamless and welded tubular products, seamless welding fittings and forged steel flanges—in carbon, alloy and stainless steels

Now from

# RAVENS

an abundant supply of KAISER AL



## SWOOD HE NATION'S MOST MODERN ROLLING MILL

#### RALUMINUM for fast delivery to Fabricators

#### Flat and Coiled Sheet Now Being Delivered to Fabricators

Mill finish flat and coiled-sheet aluminum in the common alloys is now being produced and delivered to aluminum users in the industrial mid-West, East and South from Kaiser Aluminum's new 200-Million-Dollar Ravenswood Plant (see map and availabilities chart).

With the completion in 1958 of Ravenswood's 168inch 4-hi reversing hot mill and 100-inch 5-stand continuous mill, flat sheet, coiled-sheet and plate will be available in heat-treatable as well as all common alloys.

#### Foil Production Assures Ample Supply on Short Lead Time

Aluminum foil for flexible packaging, insulating materials and many other uses is now being delivered from Kaiser Aluminum's Ravenswood plant in widths up to 54½ inches. Additional mills, including a 72-inch mill to roll widths up to 66 inches, will be installed in 1958.

Kaiser Aluminum & Chemical Sales, Inc. General Sales Office, 919 North Michigan Avenue, Chicago 11, Illinois; Executive Offices, Kaiser Bldg., Oakland 12, California.



MINIMUM DELIVERY TIME. To assure fast, efficient service to aluminum users in this area—the area where 70 per cent of U. S. aluminum is used—Kaiser Aluminum's new plant facilities are located on the Ohio River at Ravenswood, West Virginia—the heart of America's industrial mid-West. East and South!

#### Plain Foil Availabilities

Alloy-Standard foil alloy is 1145. Foil is also available in 3003, 5005, 5050, 5052 and high purity alloys for special applications.

Gauges and Widths-Under .006 to and including .00025 in widths up to 541/2".

Tempers—Available in dead soft (dry annealed) and full hard (as rolled) condition.

General—Kaiser Aluminum foil may also be obtained with a variety of surface treatments including: (1) color coating (2) embossing (3) texturizing (for better machine handling and forming characteristics). Rectangular sheeted and interleaved foil is also available.

Flat & Coiled Sheet Availabilities - non-heat-treatable alloys\*

Alloy	Temper	Gauge	Max. Width	Alloy	Temper	Gauge	Max. Width	
1100		020-065	54"	unoy	H16, H36	.020-052	54"	
1100		.006-020	36		1120, 1130	.006-020	36	
		.030-020	54		H18, H38	.020-020	54	
		.020-031	48		1120, 1130	.006-020	36	
		.006-020	36	5050	0	.020-020	54	
		.020-020	54	2030	U	.006-020	36	
		.006-020	36		H32	.020-020	54	
		.020-025	54		1102	.006-020	36	
		.006-020	36		H34	.025-061	54	
		.020-023	54		1134	.020-025	48	
		.006-020	36			.006-020	36	
3003		.020-062	54		H36	.025-055	54	
3003		.006-020	36		1130	.020-035	48	
	H12	.030-020	54			.006-020	36	
		.020-037	48		H38	.020-020	54	
		.006-020	36		1130	.006-020	36	
	H14	.020-020	54	5052	0	.020-020	54	
	117.4	.006-020	36	3032		.006-020	36	
	H16	.020-020	54		H32	.020-020	54	
	uro	.006-020	36		1132	.006-020	36	
	H18	.006-020	36		H34	.020-020	54	
	1110	.020-020	54		1104	.020-004	48	
3004	0	.020-031	54			.006-020	36	
3004	U	.006-020	36		H36	.025-040	54	
	H32	.020-020	54		1130	.020-025	48	
	1132	.006-020				.006-020		
	H34	.025-043	54		H38	.020-024		
	1134	.020-025			1130	.006-020		
		.006-020		5357	0	.020-051	54	
	H36	.025-041	54	0001	H32	.020-031		
	1100	.020-025			1106	.016-020		
		.006-020			H34	.025-045		
	H38	.020-026			1134	.020-025		
	1150	.006-020				.014-020		
5005	0	.020-020				.014-020	30	
3003	U	.006-020			LEI	NETHS		
	H12, H32	.030-063		Gauge		Maximum Length		
	ווזבי ווסב	.020-030		.072		288 ir		
		.006-020			-030	216 ir		
	H14, H34	.020-058			-019	193 ir		
	1124, 1134	.006-020			-010	168 ir		

\*These are general initial availabilities and are not necessarily maximums.

NOTE: Expanded width and gauge availabilities in these alloys and in heat-treatable sheet and plate and non-heat-treatable plate alloys will be produced in 1958. Availabilities on special finishes and patterns are obtainable upon request. For further information please contact your local Kaiser Aluminum representative.



THE BRIGHT STAR OF METALS



#### Demountable RUBBER TIRED WHEELS

You don't have to buy expensive complete new wheels when tires are worn! Bolted assembly permits tire replacement in ' minutes-No special tools!

Next time you need new wheels, casters or trucks, change to Nutting Demountables. No stretch or creep under severest service-and only Nutting, pioneers in the field, has sizes and capacities for every type of truck or trailer.

For details and a representative listing of the most complete floor truck line in America write for Bulletin 'D' and Junior Catalog 58 G.



**NUTTING TRUCK AND CASTER CO.** 1272 DIVISION STREET . FARIBAULT, MINNESOTA

port Sales: Scheel International, Inc., 5909 North Lincoln Ave., Chicage 45, III.
For More Information Circle No. 403 on Inquiry Card—Page 17

See how fits in products!

> Let us show you how to save money and increase efficiency with the proper use of felt.

REE Samples and Felt.

CONTINENTAL FELT COMPANY. IN 22 WEST 15th STREET

For More Information Circle No. 404 on Inquiry Card—Page 17

NOW YOU'LL RECEIVE 14 EXTRA ISSUES OF PUR-CHASING MAGAZINE AT NO EXTRA COST! START-ING JANUARY 6, 1958, LOOK FOR YOUR COPY OF PURCHASING EVERY OTHER WEEK . . . .

> 26 ISSUES A YEAR **INSTEAD OF 12**



The Taylor-Winfield Corporation, Warren, Ohio, has purchased the exclusive lines of metal-forming and work-handling machinery formerly built by the Struthers-Wells, Corporation, Titusville, Pennsylvania. This acquisition permits the corporation to design and build coordinated production lines to process coil or strip through to the finished welded product. The firm will also manufacture individual metal-forming machines and will provide repair, redesign and replacement service for metal-forming and work-handling equipment previously manufactured by Struthers-Wells. Facilities are now availble to manufacture tangent benders, folding machines, punching and notching machines, roller table and tumble die bending machines, brake presses, special sheet metal forming dies, sheet destackers and feeding machines, special section and pipe benders and similar custom designed equipment. Key management, engineering and manufacturing personnel of Struthers-Wells have joined the corporation to help integrate the new activity into the present organiza-

Ann Arbor Bearing and Manufacturing Co. is the new name for Morton Bearing Co., special bearing manufacturer founded in 1950. The firm has been engaged in a complete modernization and expansion program since it was acquired by the present management a year ago. The company designs and builds special bearings ranging from small needle bearings for precision instruments up to 20" diameter bearings for heavy machinery. Bearings have been made from magnetic and non-magnetic stainless steel, SAE 52100 steel, aluminum, bronze and K-Monel. Bearings have also been made from ceramics. Facilities are located at 815 Wildt, Ann Arbor, Michigan.



#### **HOBBED PINION RODS...**

You rule out assembly slow-downs, assure consistent, quiet performance of your product, when you specify G.S. Hobbed Pinion Rods... available up to \( \frac{1}{8} \) diameter, up to 12 feet in length, in various shapes and materials. Why? Because G.S. specialized experience, specialized equipment, specialized techniques, and rigidly controlled precision processes mean unsurpassed quality in G.S. production runs of all forms of Small Gearing—Spurs, Spirals, Helicals, Bevels, Intervals, Worm Gearing as well as Pinion Rods.

The greatest names in U.S. industry depend on G.S. Small Gears. We can serve your most critical needs as we serve theirs-let our Small Gear experts work out your problems with you.

SEND FOR G.S. technical data, free! See where and how we mass-manufacture Small Gearing to uniformly fine tolerances. Folder contains 23 pictures of Small Gears, plant view, as well as Diametral and Circular Pitch Tables. Ask for your copy on company stationery, please!

SPURS . SPIRALS . HELICALS . BEVELS . INTERNALS WORM GEARING . RACKS . THREAD GRINDING

Specialties, Inc.

2635 WEST MEDILL AVENUE CHICAGO 47, ILLINOIS

ORLD'S LARGEST EXCLUSIVE MANUFA OF FRACTIONAL HORSEPOWER GEAL

41 Years of Specializing in Small Gearing!

For More Information Circle No. 405 on Inquiry Card-Page 17

#### Now! A Complete Line of Self-Locking Microsize UNBRAKO Socket Cap and Set Screws

Nos. 0, 1, 2 and 3 in alloy steel and stainless steel are available with the Nylok\* feature

You effect major economies in time and money when you design and assemble small devices with self-locking microsize Unbrako socket screws. These close tolerance screws won't work loose. They simplify standardization of small devices where maximum reduction of weight is required without sacrifice of strength. They eliminate the necessity of designing costly special screws to fasten tiny parts in compact assemblies and they prevent the waste of production time while waiting for delivery of special screws.

In addition to having the overall advantages of microsize Unbrako socket screws, these screws can be used in holes tapped in soft or die cast materials without stripping threads and ruining expensive work. Also the set screws can be used with hardened shafts, since they lock against the threads of the tapped hole.

All Unbrako socket screws can be supplied with the self-locking Nylok feature. The Unbrako with Nylok is a single self-locking unit. No auxiliary locking devices are needed. Seated or not, the screw locks positively wherever wrenching stops, won't work loose—because the tough resilient nylon pellet forces mating threads together.

Ask your authorized industrial distributor for details today. He carries complete stocks of self-locking Unbrako socket screws (caps and sets from #0 through 1 in., button heads #4 through 1/8 in., flat heads from #4 through 1/4 in.). Or write us for literature and samples. Unbrako Socket Screw Division, STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.

\*T.M. Reg. U.S. Pat. Off., The Nylok Corporation

		L	⊕-]-[	HEAT-TREATED ALLOY STEEL  Self-Locking Microsize UNBRAKO  Socket Cap Screws  Class 3A Threads						
Screw Size		Threads per in.		L Over- all Length	Pellet Location		Torque			
		NC NF	NC		NF	Max. prev. on	1st off stat. min.	5th off stat. min.		
	A .104	-	80	1/8	-	.047	5.5	14.0*	7.0	
#0	B .060	-	80	3/16	-	.047	5.5	14.0*	7.04	
# 0	D .060		80	1/4	-	.047	5.5	14.0*	7.01	
	F .050		80	3/8	-	.047	5.5	14.0*	7.01	
	A .118	_	72	1/8	-	.047	11.0	28.0*	14.01	
44.9	B .073	-	72	3/16	-	.047	11.0	28.0*	14.01	
#1	D .073	-	72	1/4	-	.047	11.0	28.0★	14.01	
	F .050	-	72	3/8	-	.047	11.0	28.0*	14.01	
	A .140	56	_	3/16	.063	-	24.0	3.0	1.5	
40	8 .086	56	-	1/4	.063	-	24.0	3.0	1.5	
# 2	D .086	56	-	3/8	.063	-	24.0	3.0	1.5	
	F 1/16	56	-	1/2	.063	-	24.0	3.0	1.5	
	A .161	48	_	3/16	.063	_	40.0	6.5	3.0	
4.	B .099	48	-	1/4	.063	_	40.0	6.5	3.0	
#3	D .099	48	-	3/0	.063	-	40.0	6.5	3.0	
	F 5/64	48	_	1/2	.063	_	40.0	6.5	3.0	

\*Measured in in.-gm. (those not marked with a star are measured in in.-oz.)

#### D D

#### HEAT-TREATED ALLOY STEEL Self-Locking Microsize UNBRAKO Socket Set Screws Class 3 A Threads

Screw Size		Threads per in.		L Over-	N Pellet Location		Torque		
		NC	NF	Length	NC	NF	Max. prev. on	1st off stat. min.	5th off stat. min.
		-	80	3/32	_	.047	5.5	14.0*	7.0*
	D .060 F .028	-	80	1/8	-	.047	5.5	14.0*	7.0±
#0		-	80	5/32	-	.047	5.5	14.0*	7.0×
		-	80	3/16		.047	5.5	14.0*	7.0*
		-	80	1/4	-	.047	5.5	14.0*	7.0±
	D .073 F .035	-	72	1/8	-	.062	11.0	28.0*	14.0*
4 .		-	72	5/32	-	.062	11.0	28.0★	14.0*
#1		_	72	3/16	_	.062	11.0	28.0±	14.0+
		-	72	1/4	-	.062	11.0	28.0*	14.0*
	D .086 F .035	56	-	1/8	.062	-	24.0	3.0	1.5
# 2		56	-	5/32	.062	-	24.0	3.0	1.5
# 2		56		3/16	.062	_	24.0	3.0	1.5
		56	-	1/4	.062	-	24.0	3.0	1.5
	D .099 F .050	48	-	5/32	.093	_	40.0	6.5	3.0
#3		48	-	3/16	.093	-	40.0	6.5	3.0
		48	-	1/4	.093	-	40.0	6.5	3.0

\*Measured in in.-gm. (those not marked with a star are measured in in.-oz.)

Self-locking microsize Unbrako socket cap and set screws are available in sizes #0 through #3, in heat treated alloy steel (plated or unplated) and stainless steel, at your authorized industrial distributor. He also carries a complete stock of other self-locking Unbrako socket screws.

We also manufacture precision titanium fasteners. Write for free booklet.



Jenkintown • Pennsylvania

Standard Pressed Steel Co. • The Cleveland Cap Screw Co. • Columbia Steel Equipment Co., Inc. • Cooper Precision Products • Standco Canado Ltd. Unbroko Socket Screw Co., Ltd.

For More Information Circle No. 406 on Inquiry Card—Page 17  $280\,$ 

For More Information Circle No. 407 on Inquiry Card—Page 17→
PURCHASING



CHEMISTS WILL TELL YOU that Falstaff, Shakespeare's symbol of hearty appetite, is a lot like Shell ketones. This family of solvents also has a tremendous appetite—for the nitrocellulose used in making lacquers.

S

Lacquer makers can now cut production costs while turning out a finer product, because the hungry ketones permit use of low-cost diluents, yet dissolve more lacquer solids. A ketone-based finish gives longer-lasting protection—plus colorful sales appeal—to automobiles or baseball bats . . . refrigerators or yachts . . . bowling pins or furniture.

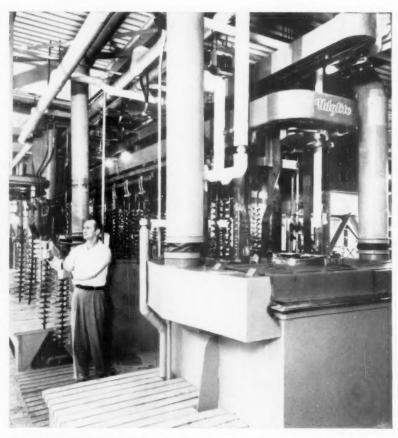
The ketone family of solvents is another Shell Chemical development which has resulted in the improved quality and lower cost of basic industrial and consumer products.

#### Shell Chemical Corporation

Chemical Partner of Industry and Agriculture

NEW YORK





#### Udylite Machine and Process combine to set new Scripto standards

The Udylite Cyclemaster provides the accuracy and steady flow of production. Udylite Bright Nickel furnishes the sparkling finish. Together they solve for Scripto, of Atlanta, Georgia, the knotty problem of better finish of the Scripto pens, pencils and cigarette lighters.

Scripto's first bright nickel was the Udylite #31 process. It was superseded by the Udylite #514 process to gain the faster brightening which is so important in nickel plating to a high luster with a thin coat.

The adoption of Udylite Bright Nickel Process #724 was the next step as it offered still faster brightening and even more important all the time saving advantages of all liquid brighteners.

Step by step Scripto has lowered costs and improved quality with Udylite Processes and Precision Automatic Plating. Here is just one of many examples of the right application of process and equipment. Out of the line of Udylite products can come the answer to your problem as well.

Contact your local Udylite Sales Representative . . . let him show you how the *right* combination of Udylite processes and machines can improve your quality and production.



For More Information Circle No. 408 on Inquiry Card-Page 17



John R. Davis has been appointed the Southeastern representative for the Machine Division, Osborn Manufacturing Company,



John R. Davis

Cleveland, Ohio. His territory will include Tennessee, Virginia, Alabama, Florida, Georgia, North Carolina, South Carolina and Mississippi. Mr. Davis had spent four years representing the B. F. Goodrich Company in the sale of polymers, core binders and organic chemicals before his new appointment.

Three new representatives have been appointed by Detroit Tap & Tool Company, Baseline, Michigan. The R. Van Alstyne Tool Company, Schenectady, New York, will stock most catalog types of Detroit tools. They cover the northeastern New York area. J. Ray Uber, Monroeville, Pennsylvania , will represent the company's line in western Pennsylvania, eastern Ohio, northern West Virginia, and in western Maryland. Robert N. Kendall, Milwaukee, will handle company products in the Milwaukee industrial

John J. Boyle, Jr. has been made exclusive sales and service representative in the Columbus, Ohio area by Lewis-Shepard Products, Inc., Watertown, Mass.

# Doall acquires World's finest source OF BLACK GRANITE-DIORITE FOR SURFACE PLATES



taon, oy,

NO SOFT SPOTS



WON'T SCRATCH



So dense and smooth a scriber can't find soft spots nor will it scratch sensitive acctate. DoALL Black Granite-Diorite is the superior material in all ways. You can see its denser grain structure, compared with pink and gray.

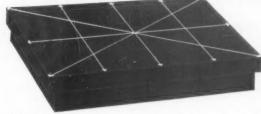
BLACK GRANITE



PINK GRANITE



**GRAY GRANITE** 



A better accuracy standard. DoALL Black Granite-Diorite surface plates are specified from an over-all mean plane, not per square foot area.

#### 10-DAY FREE TRIAL OFFER!

Prove for yourself in your own plant the superiority of Black Granite surface plates. We will deliver your choice from these four sizes:  $8'' \times 12''$ ,  $12'' \times 18''$ ,  $18'' \times 24''$  and  $24'' \times 36''$ .



U. S. DEPARTMENT OF COMMONS

RESEARCH PAPER RPIND

Fore of Journal of Research of the National Business of Standards, Volume 25.

August 1960

PHYSICAL MINERALOGICAL AND DURABILITY STUDIES
ON THE BUILDING AND MONUMENTAL GRANITES OF
By Daniel W. Konder, Harbort Index, and William H. Sign

Tath, no. 116 maniples of granific (including the "black Branism"). From the print of the immediate of common processing and the processing of the common pro

Home of DoALL Black Granite-Diorite is this Quarry No. 115 near Escondido, California, which the National Bureau of Standards lists in its research paper R.P. 1320 and Fed. Spec. 666-P-463 as the source of finest Black Granite-Diorite.

#### SEE THE DIFFERENCE IN YOUR OWN SHOP

While granites in general are usually selected as surface plate material over cast iron, much confusion exists as to which granite is the best.

Different types of granite have varying degrees of soft spots or lack toughness and resistance to wear. Others do not have the density necessary for greatest strength and least porosity, and some types cannot be properly lapped to a fine finish. All of these factors lessen the degree of accuracy obtainable. In its search for better granites, the National Bureau of Standards Research Paper RP-1320 states: "The Black Granites (gabbros and basalts) were indicated to be stronger, denser and less absorptive than the normal granites."

By obtaining the best in granites, DoALL can impart its years of gaging experience to the manufacture of the finest in surface plates.

Take advantage of our *Free Trial* offer to find out why DoALL Black Granite-Diorite is preferred over all other surface plate material.

Call your DoALL Gage Specialist now; he will give you expert assistance in determining your accuracy and size requirements.

BG-2

THE DOALL COMPANY, Des Plaines, III.



For More Information Circle No. 409 on Inquiry Card-Page 17



#### Monel, Inconel, K Monel, 70-30 Copper-Nickel

Any time you need any of these or other nickel alloys, you can count on Philadelphia Bronze & Brass for prompt delivery. We can cast or forge pieces up to 5000 pounds, in our completely equipped foundry and forge facilities.

Over 30 years of experience in non-ferrous work is ready to serve you. Our responsibility can cover your full requirements, including pattern making, alloying of special materials, casting, forging and rough or finish machining.

Strict quality control assures adherence to your

specifications. We use certified materials from International Nickel Company for forgings. For castings, we alloy only virgin metals. Advanced test equipment is used for checking quality and uniformity.

Write today for our catalog describing our facilities and line of non-ferrous alloys . . . including high conductivity copper, Mallory alloys for welding, aluminum bronzes, silicon and manganese bronzes, and titanium alloys. For a quotation on your specific job, call us or any of the many field offices of P. R. Mallory & Co. Inc.

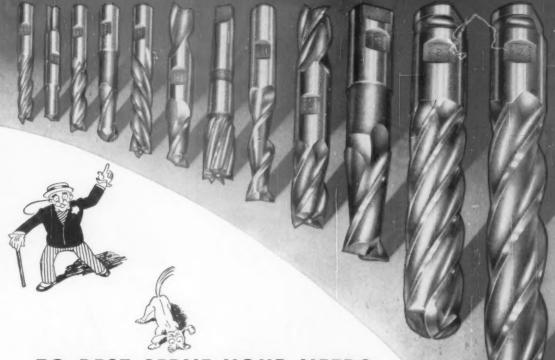
\*Trademarks of International Nickel Company

PHILADELPHIA **BRONZE & BRASS CORP.** 

22nd and Master Streets, Philadelphia 21, Pa.

-a subsidiary of

# END MILLS ARE OUR BUSINESS . . . NOT A SIDELINE



#### TO BEST SERVE YOUR NEEDS

For over twenty years our designing and manufacturing abilities have been devoted to producing highest quality end mills. Because end mills are our business, we realize that universal acceptance of our product is obtained and maintained by continuously supplying the best end mills available.

Putnam manufactures and stocks over 1400 standard types and sizes of end mills. Thus, you can quickly and economically select the exact size and type to best meet your needs.

Putnam Distributors from Coast-to-Coast carry large stocks of standard end mills. Contact your neighbor, the local Putnam Distributor, he will recommend the best end mill for specific jobs, give you personalized service, and quickly supply your needs with the finest end mills obtainable.



#### Purchasing Profiles

"Whenever we need new or special items from local suppliers...



#### "THE YELLOW PAGES ARE OUR INDISPENSABLE SOURCE"

says R. C. Olsen, Purchasing Agent Die Casting Division, Stewart-Warner Co. Chicago, Illinois

"In my 25 years of purchasing with this company I can't think of one thing for which I couldn't find a supplier in the Yellow Pages. I use the Yellow Pages in the purchase of equipment and foundry supplies necessary in the production of our aluminum and zinc die castings."



In industry after industry, purchasing agents like Mr. Olsen depend on the Yellow Pages to locate equipment or service. Next time you are looking for a supplier, you'll find it helpful to consult the Yellow Pages.

America's Buying Guide For Over 60 Years!

For More Information Circle No. 412 on Inquiry Card-Page 17



The Monarch Rubber Company, Hartville, Ohio, has announced the opening of a new Midwestern district office and the appointment



Bert S. Hough

of Bert S. Hough as Midwestern district manager. The new sales office at 2353 North California Avenue, Chicago, has been established to serve the states of Illinois, Iowa, Minnesota, Missouri and Wisconsin. Mr. Hough will be responsible for sales and service on the company's complete line of industrial solid and Mono-Cushion press-on tires for materials handling trucks as well as molded mechanical rubber goods.

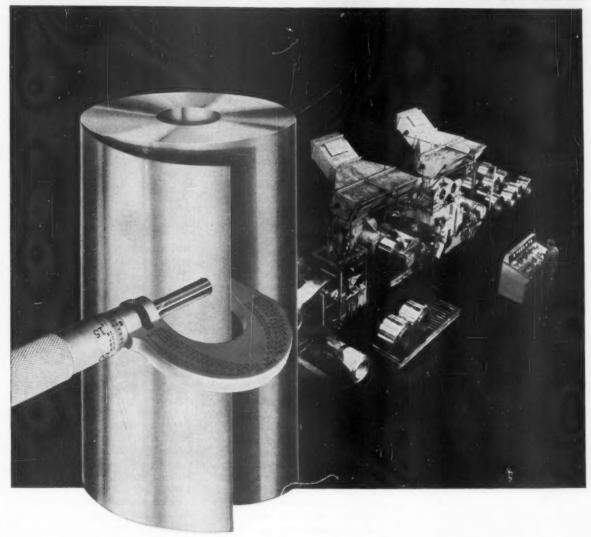
Frank D. Brittain has been promoted to vice president in charge of sales for all die casting operations of Hoover Ball and Bearing Company, Ann Arbor, Mich. The company's Die Casting Divisions include Universal, Saline, Mich., Utilex, Flowerville, Mich., Glenvale, Malvern, Ark., and Adrian, Adrian, Mich.

Gast Manufacturing Corporation, Benton Harbor, Michigan, has appointed Warren E. Gast sales manager. He joined the company in 1948 and has served as sales engineer for four years.

For More Information Circle No. 413 on Inquiry Card—Page 17→ PURCHASING

#### When Brass Strip Tolerances Call For

## PERFECTION TO THE "Nth" DEGREE



Possibly, you've never seen—or even heard of—a Sendzimir Rolling Mill like the one pictured above. Not many people have. But if you use close-tolerance brass, copper or bronze strip, you'll certainly appreciate what these high-speed, precision units can do when you order Bridgeport Sendzimir-Rolled Strip.

These mills—now in operation at Bridgeport's plants—are capable of rolling light-gauge strip into economical, long-length coils to meet the most rigid gauge tolerances.

Bridgeport Sendzimir-Rolled Strip has other advantages as well. It has remarkable uniformity of gauge and mechanical properties from edge to edge and end to end. It also has a beautiful luster—all properties you can use to advantage in your own production.

Get details on Bridgeport Sendzimir-Rolled Strip today. Our nearest Sales Office is ready to give you complete information.



#### BRIDGEPORT BRASS

Offices in Principal Cities \* Conveniently Located Warehouses Bridgeport Brass Company, Bridgeport 2, Connecticut In Canada: Noranda Copper and Brass Limited, Montreal

# Cold Heading Cuts Costs

#### Fasteners and Small Parts Show Big Savings

One of the most important cost cutting developments in recent years is the increasing use of cold headed fasteners and small parts throughout industry. Parts produced by this process show marked savings when compared to the same production on screw machines. The most obvious advantage is in the economical wire stock used in cold heading. The more expensive bar stock used in the screw machine method results in considerable waste, whereas the waste is almost negligible in cold heading.

Another important consideration is the greater strength structure of parts made by the cold heading method. The blow of the heading tool causes the grain structure of the metal to flow in lines of greater strength whereas the strong outer surface of the screw machine product has been reduced to scrap.

The possibilities of cold heading are almost unlimited when used in conjunction with secondary operations. The tremendous savings in operation and material costs make it a must consideration when designing small parts either as fasteners or as integral units for manufactured parts. It has been a long time policy of John Hassall, Inc. to support their cold heading equipment with the latest methods of secondary manufacture. Machines for roll threading, slotting, drilling, tapping and many other operations are available for your profit.

Given complete specifications, including a drawing and an idea of the application, we can quickly tell you whether or not it will be advantageous to have your fastener or part JOB-DESIGNED by HASSALL. The remaining important aspect of our service to you is the ability to get into production quickly and make prompt shipment.

Write for a copy of our new booklet, "What the Designer Should Know about Cold Heading."

#### John Hassall, Inc.

P. O. Box 2268
Westbury, Long Island, N. Y.
Manufacturers Since 1850

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# news

## Air Force Develops Special Buying Techniques

Air Force Base Procurement offices spent nearly a billion dollars last fiscal year under the Base Procurement Program according to Air Materiel Command officials.

A substantial portion of \$973,-662,458, the actual amount spent, flowed into communities near the 263 Air Force bases located in the United States and abroad that are authorized a base procurement program.

Air Materiel Command developed these figures in exercising its function of Air Force world-wide surveillance of the base procurement program. AMC has over-all procurement responsibility for all materiel and services required by the Air Force. However, in accomplishing surveillance of the Air Force base procurement program AMC has delegated certain procurement authorities, within specified monetary limitations, to Air Force bases and major air commands.

"Base Procurement," previously referred to as "Local Purchase," is the term used by the Air Force to designate those items of equipment, supplies, and services which an Air Force activity is authorized to purchase for its own use or the use of a subordinate activity it logistically supports. The terms "Base Procurement" or "Local Purchase" are not to be construed to mean that procurement sources are confined to a particular geographical area but rather that the authority to procure is delegated to the local Air Force installation.

#### Small Business Helped

A vast new business potential for merchants located in the local trade areas of Air Force bases has been created by the continued expansion of the base procurement program by the Air Force. Statistics released by AMC officials disclosed that today the Air Force procures approximately 170,000

items that are authorized for base procurement as compared to only 60,000 such items in 1948. A substantial portion of this increased base procurement program lends itself to procurement from local merchants, dealers and manufacturers in close proximity to Air Force bases and results in a very wide distribution of the Air Force base procurement dollar to "small business" concerns.

Some of the conditions that make an item for base procurement are: the item is normally available in quantity from commercial outlets; is adequate for Air Force needs, buying will not be in such quantity as to adversely affect the market; and the item does not possess peculiarly military characteristics and would not affect the flying safety characteristics of aircraft.

Base procurement normally does not include items which are centrally procured, cataloged and issued by Air Materiel Command.

Supplies authorized for procurement under the base procurement program include such items as hardware, electrical and plumbing supplies, subsistence, lumber, building supplies, and automotive parts.

Services include construction such as maintenance or rehabilitation of buildings, new construction, commercial operation of dining halls, laundry and dry cleaning services, packing, crating and storage of household goods, architect-engineer services, ground maintenance services, etc.

#### Communities Affected

Practically every facet in the operation of an Air Force base is directly or indirectly affected by the base procurement program. Likewise, communities located in the local trade area of an Air Force base are affected by another source of business for merchants

(Please turn to page 292)

CUSTOM-CUT SHAPES - Another reason why it pays to buy from U. S. STEEL SUPPLY!



# U. S. Steel Supply's flame-cutting service reduces handling and machining costs

THE PICTURE ABOVE shows an ultramodern automatic flame-cutting machine pre-shaping to exact specifications an order of plate steel for a U. S. Steel Supply customer. And saving him plenty . . . by reducing his handling and machining costs . . . and by improving both the quantity and the quality of his output.

You'll find the latest custom-cutting equipment, including costly flame-cutting machines, in all of our 18 warehouses. By using our facilities, you eliminate the need for installing and maintaining equipment of this type in your plant . . . and thereby materially reduce your capital investment in shop equipment.

If you would like to know about the time-and-moneysaving advantages of buying your steel from U. S. Steel Supply, we suggest that you contact our nearest warehouse.

U. S. STEEL SUPPLY

P. O. Box 1099, Chicago 90, III.



General Offices:
208 So. La Salle Street, Chicago 4, Ill.

Warehouses and Sales Offices Coast to Coast

NITED STATES STEEL

For More Information Circle No. 415 on Inquiry Card-Page 17

DECEMBER, 1957

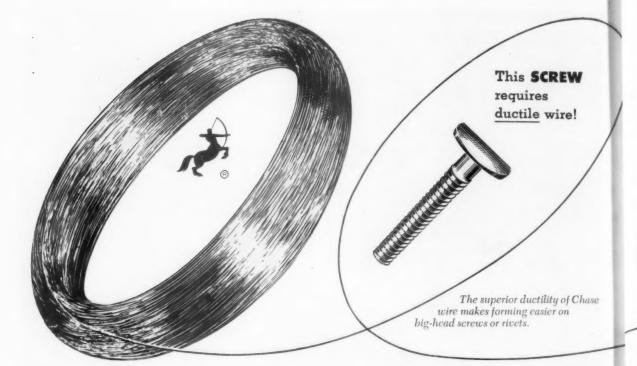
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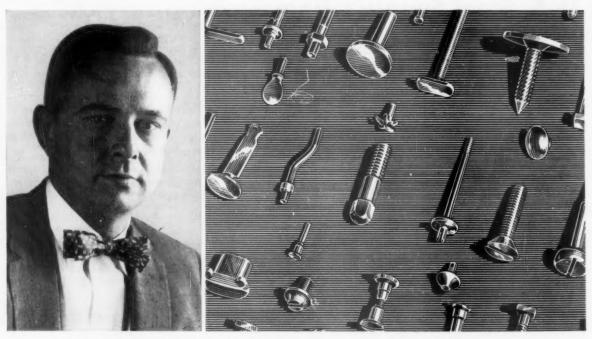
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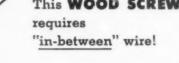


# Chase makes wire



**THE CHASE WIRE SERVICE MAN,** W. F. Schmollinger, our wire mill superintendent, heads our team of experts...spends his time solving *your* problems. Often in the field, working with engineers and shop foremen, he has helped many manufacturers of cold-headed parts to make a finer product!

This **BOLT**requires
high-strength wire!





High-strength Chase wire for square and hexagonal head bolts makes a finer quality product.



Some items, like wood screws, call for wire with both high strength and ductility.

# to fit your product!



#### WHAT DO YOU NEED IN WIRE?

Ductility? High strength? Perhaps a certain amount of both? Chase makes a variety of alloys and tempers, to meet most every production requirement. But if Chase doesn't already make it, we'll product-engineer wire for your individual needs!

It's a unique Chase service! Although Chase wire is quality-controlled and free from imper-

fections, even the best wire can't do a perfect job unless it's the right alloy and temper for you.

So before you order wire again, get in touch with Chase. Tell us just what you do with wire ... what properties you look for ... describe any problems you may be having. Send us samples or drawings of your product. By studying your individual requirements, trained Chase technicians can help you gain greater efficiency and economy in production.

Contact the Chase Wire Service Man through the warehouse or office nearest you!



WATERBURY 20, CONNECTICUT
SUBSIDIARY OF KENNECOTT COPPER CORPORATION

The Nation's Headquarters for Brass, Copper and Stainless Steel

Atlanta Baltimore Boston Charlotte Chicago Cincinnati Cleveland Dallas Denver Detroit Grand Rapids Houston Indianapolis Kansas City, Mo. Los Angeles Milwaukee Minneapolis Newark New Orleans New York (Maspeth, L.I.) Philadelphia Pittsburgh Providence Rochester St. Louis San Francisco Seattle Waterbury

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# At Forest City your order for gray iron castings receives personal attention



The moment your order is entered by the sales department it is regarded as a challenge.

Can the pattern be improved? Do laboratory tests assure proper grades of raw materials and finished product? On which core-making and molding lines can the order be handled to the greatest advantage?

All such questions receive the careful consideration of the heads of the various departments. From start to finish your order is processed to give you not only the finest in gray iron castings, but also the utmost in service.

Let us show you how we can give your order for gray iron castings our personal attention. At your convenience, our representative will be glad to discuss your particular requirements and our ability to meet them.

The Forest City Foundries Company

2500 West 27th Street . Cleveland 13, Ohio

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(Continued from page 288)

and contractors, and stability of employment.

Big business for little business? In the fiscal year period ending 30 June 1957, total local purchase procurements for the Air Force world-wide involved over a million purchase actions.

The base procurement program was designed as an economy measure by the Air Firce to furnish the taxpayer more air power for his defense dollar by eliminating much of the cost inherent in centralized buying, receiving, warehousing, inventorying, repacking and reshipping items that were formerly purchased by a central procurement activity of the Air Materiel Command.

Air Force base procurements are done by negotiation or formal advertising as appropriate. Procurements for less than \$2500 are normally competitively negotiated and procurements in excess of \$2500 are normally advertised.

Purchasing under the present system is set up under the following methods. The first is the petty cash method under which items under \$100 may be bought directly from a local supplier, on a payas-received basis, obviating accounting and billing by the seller.

#### Blanket Purchase System

The second procedure is through the placing of charge accounts using a blanket purchase agreement. This method is used for the purchase of requirements in recurrent demand such as electrical and plumbing supplies and hardware. Under this system suppliers furnish supplies or services specified in the blanket purchase agreement during a specified period not to exceed three months and within a stipulated dollar amount not to exceed \$1000

(Please turn to page 294)

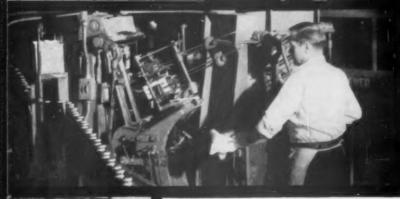
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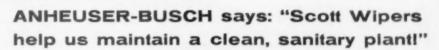
People buy Scott Wipers for many reasons:







Mr. R. G. Mathi, of the Process Control Department, Anheuser-Busch, says: "We use Scott Wipers for keeping transfer tables clean, wiping excess glue at our label machines, wiping safety glass partitions, preventing moisture accumulation on machines and other equipment, cleaning dismantled equipment and parts, and of course for personal use—because they're absolutely sanitary."



Famous Budweiser, Busch Bavarian and Michelob Beers are bottled, canned, barrelled and packaged under the most rigid standards of quality control. Early in 1956, Anheuser-Busch, Inc., St. Louis, put in Scott Wipers as a "housekeeping aid," with great success. Disposable 2-ply paper Scott Wipers are soft, highly absorbent, lint-free and uniform in size . . . make housekeeping easier. Employees like their quick avail?' lity in individual boxes at each work station. Scott Wipers are always fresh and sanitary out of the box! And being disposable, Scott Wipers eliminate special handling.



For the complete Anheuser-Busch case history—facts and figures—find your local Scott distributor in the Yellow Pages under "Paper Towels" and call him! Or write: Scott Paper Company, Dept. PU-712, Chester, Pa.

Maker of the famous Scott paper products you use in your home. See "Father Knows Best" and "The Gisele MacKenzie Show" on NBC-TV.



## YOU CAN'T BEAT N B D FOR MACHINED BRONZE BEARINGS

For heavy-duty bronze castings, you can't beat NBD quality, casting know-how and machining facilities. Weights up to 20,000 lbs . . . machined to any degree of finish . . . in sizes up to 72 inches in diameter. Precise tolerances held to your specifications.

Many leading equipment manufacturers are taking advantage of our years of specialization in bronze metallurgy...our more than 40 special bronze alloys...our complete facilities for sand casting, shell mold, cast-to-size and centrifugal casting.

Want quotes or information? Just call or write.



#### NATIONAL BEARING DIVISION

717 Grant Building • Pittsburgh 19, Pennsylvania PLANTS IN: CHICAGO • ST. LOUIS • MEADVILLE, PA.

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(Continued from page 292)

per "call." The vendor in this case bills the Air Force at the end of each month for all calls on which performance has been completed during the month against the basic order, thus cutting out individual invoicing by the seller. Total value of all calls issued against a blanket purchase order may be established for as much as \$15,000. Vendors are not expected to make multiple deliveries of small dollar value purchases and no calls will be placed against blanket purchase agreements unless delivery can be accomplished within the effective period of the agreement.

Under the third method of procurement, the Order-Invoice-Voucher method (Standard Form 44), items which cost less than \$1000 are normally bought by competitive negotiation. This method permits the Air Force to contact a number of local suppliers with a list of supplies and services needed. The firms return price quotations, oral or written, as solicited, and the requirements are purchased from the supplier who provided the most favorable offer. Standard Form 44 is authorized when supplies and services are immediately available from the local trade area and one delivery and one payment will be made. This form is used for overthe-counter purchases, purchases made by authorized individuals while away from the purchasing office and purchases at isolated stations.

Negotiated procurements for less than \$2500 which do not lend themselves to the above procedures are normally accomplished by unilateral purchase order after solicitation of competition. Bid invitations are sent to suppliers and sealed bids submitted.

PLEASE USE
INQUIRY CARD—PAGE 17

# CAN BANDS INCREASE TOTAL SARDINE SALES

3-pack scores highest in 16-week supermarket test



By how much does multiple packaging increase total sales of a food item without special promotions?

Which unit packs are most effective?

These were 2 of the questions which led the Maine Sardine Council to sponsor a marketing test in 8 Best Markets in the Philadelphia metropolitan area. The brand used was Royal River Maine Sardines. Container Corporation of America developed and furnished the 3-, 4- and 6-pack Can Bands®

Increases were measured per 1000 customer checkouts. The best record was made by the 3-pack Can Band when offered without loose cans on the shelves -a 35% increase. A 31% increase was scored by the 4-pack and 6-pack Can Band when displayed alongside loose cans.

CCA continuously participates in objective market tests to determine trends in consumer preference of multipacks which will best serve your needs.

Details and analysis of this test are available now. Fill in the coupon and send for your copy today.

#### CONTAINER CORPORATION OF AMERICA

38 South Dearborn St., Chicago 3, Illinois Please send me without charge full details and analysis of the multiple packaging test sponsored by the Maine Sardine Council.

Position

Company Address

Product(s)

For More Information Circle No. 420 on Inquiry Card-Page 17



#### Got a hot work problem?

Crucible **CHRO-MOW** hot work tool steel may be the solution. It's tough, resists wear at elevated temperatures—and you can get it quickly from local Crucible warehouses.

CHRO-MOW is an air hardening tool steel with a very desirable combination of toughness, red hardness and resistance to heat checking. That's why it's an excellent choice for hot forging dies, extrusion dies, or mandrels.

But Chro-Mow is only one of dozens of special tool steels regularly stocked at Crucible warehouses. There is a grade for each of your needs.

And, at Crucible, experienced engineers are ready with advice on selection or fabrication, when you want it. For Crucible is the only specialty steel producer fully integrated to the point of use. That means control and responsibility from raw material to warehouse delivery to you.

#### STOCKS MAINTAINED OF:

Rex High Speed Steel . . . ALL grades of Tool Steel (including Die Casting Die and Plastic Mold Steel, Drill Rod, Tool Bits, and Hollow Tool Steel Bars) . . . Stainless Steel (Sheets, Bars, Wire, Billets, Electrodes) . . . Max-el, Hy-Tuf, AISI Alloy . . . Onyx Spring, Hollow Drill Steel and other special purpose steels.

## CRUCIBLE

#### WAREHOUSE SERVICE

#### Crucible Steel Company of America

General Sales Offices, The Oliver Building, Mellon Square, Pittsburgh 22, Pa. Branch Offices and Warehouses: Atlanta • Baltimore Boston • Buffalo • Charlotte • Chicago • Cincinnati • Cleveland • Dallas • Dayton • Denver • Detroit • Grand Rapids Harrison • Houston • Indianapolis • Los Angeles • Milwaukee • New Haven • New York • Philadelphia • Pittsburgh • Portland, Ore. Providence • Rockford • San Francisco • Seattle • Springfield, Mass. • St. Louis • St. Paul • Syracuse • Toronto, Ont.

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#### thanks to CHAMPION LIGHTMANSHIP

#### OVER 200 INSPECTIONS-

just one example of how Champion applies LIGHTmanship to make sure you get all the light you pay for.

Checks and counter checks at every step of production guard you against early burn-outs and early dim-outs when you use Champion lamps.





#### CHAMPION LAMP WORKS

LYNN, MASSACHUSETTS

A Division of Consolidated Electric Lamp Co.

MILLIONS OF LAMPS A YEAR . . .

ONE PLANT Standard of Quality Control

For More Information Circle No. 423 on Inquiry Card-Page 17

#### BOOK REVIEW

#### **Work Simplification**

by Gerald Nadler McGraw-Hill Book Co. \$6.50

Everyone in management is naturally interested in work simplification. The principles are applicable to every operation in the factory and office. The P.A. is, of course, particularly interested in work simplification as it applies to the office-although a knowledge of the subject doesn't do him any harm when he's evaluating a new supplier's facilities and manufacturing know-how. Work Simplification is concerned primarily with techniques to boost manufacturing efficiency (though the principles involved are applicable to any form of work). It tells how to apply labor saving techniques to a wide variety of operations. It emphasizes the human beingnot the machine—and shows how improved manual work methods can boost productivity and cut fatigue. Techniques discussed include use of new Therbligs, UNOPAR (electronic device for measuring operator motions), and revised process and operation chart symbols.

#### Three Essays on the State of Economic Science

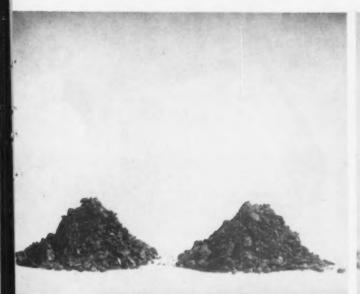
by Tjalling C. Koopmans
McGraw-Hill Book Co. \$6.50

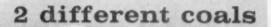
Particularly in the smaller company, the P.A. is rapidly making a place for himself as an over-all company economist. The reason: he's the closest to the over-all economic world that lies beyond the more narrow horizons of company and industry. The essays by Dr. Koopmans are stimulating reading for the P.A. with formal academic training in economics. They're about the parallel and related development of economic theory and economic observation and measurement in order to increase the understanding and control of economic conditions. The first essay deals with allocation of resources and the price system. The second with the construction of economic knowledge, and the third with the interaction of tools and problems in economics.

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> > PURCHASING

# IT'S NEW! Coal-custom blended to your exact requirements







#### become 1

#### World's Finest Coal Blending Plant Makes this Possible

Now, rather than get coal of the approximate quality you require, you can get coal of exact specifications.

Garland Coal Company's new custom blending plant in Virginia makes this possible for you. The plant is located on the Norfolk and Western Railroad and has 6 loading tracks. The coal can be loaded in any size required and 6 grades may be prepared simultaneously.

Different coals are stored in individual hoppers. A large conveyor belt passes beneath. The engineer then releases varying amounts of coal from each hopper to custom blend a mixture of coals. You get exactly the high, medium or low volatile coal you want with the exact ash, sulphur, coke index, grindability and BTU content.

Contact Garland Coal Company today and find out how Garland's new custom Blending Plant can give you more efficiency from coal, thus saving you money.



Garland Coal Co.

KNOXVILLE, TENN. COLUMBUS, OHIO — CHAROTTE, N. C.



Coal is a Better Buy Than Ever. Coal actually costs 1.2% less than it did in 1948 while the price of competitive fuels has risen substantially. Enormous reserves of coal in this country insure a constant supply of relatively low cost fuel. Coal is still your best buy.

Garland Coal Co., 917 Hamilton Bank	Bidg., Knoxville, T	enn.
I would like more information on Custom	Blending of Coal.	

Name\_\_\_\_\_\_\_\_Address

Company Position

Here's what

means by a complete job

WESTERN

and here's how you save time, money and headaches



#### For the purchasing agent — money saved

Value Analysis proves that you are generally time and money ahead by purchasing a complete assembly rather than a myriad of component parts. You need just one purchase order, and you get the

distinct advantage of centralized responsibility. We do the complete job, too, including finishing operations—heat-treating, grinding and pentrating.



#### For the design engineer—time saved

WESTERN works with you from the design stage on, helping you to develop the correct design for maximum product quality and production economy. No other manufacturer exceeds WESTERN

In experienced development engineering of precision parts for the automative, aircraft and appliance industries.



#### For the production manheadaches saved

WESTERN's unexcelled production facilities, plus heavy experience in close tolerance work, make us a valuable member of your production team. From wire size up to a husky  $4\frac{3}{4}$ " round, our

terrific turning capacity assures delivery of your precision parts requirements the way you want them—the day you want them.



NOT This —a myriad of separate parts that still require finishing and assembly.



Why not send us your blueprints for quotation—today?

## WESTERN

Machine Screw Company

division of Standard Screw Company 378 Woodland Ave., Elyria, Ohio

Write for Free bulletin describing WESTERN'S complete production facilities

PRECISION SCREW PRODUCTS, PARTS AND ASSEMBLIES SINCE 1873
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For More Information Circle No. 426 on Inquiry Card—Page 17
PURCHASING

BAY STATE



To the piano virtuoso, precision performance means that vital link between his talent and the instrument.

To tap users, precision performance means production-line continuity, better threaded parts, increased tap life . . . and BAY STATE!

#### BAY STATE TAPS

Bay State Tap & Die Company
Mansfield, Massachusetts

On the nearby shelves of your Industrial Supply Distributor



When a fluorescent lamp reaches the end of its useful life and starts to blink, the thermal circuit breaker inside the General Electric Watch Dog starter opens the starting circuit and cuts out the lamp . . . the blinking stops. Because no current flows through the starter and ballast, and no wasted attempts are made to light a dead lamp, the G-E Watch Dog starter will outlast up to 10 ordinary starters.

When relamping, a touch of the red button on the G-E Watch Dog starter lights the lamp without the normal waiting period of up to 3 minutes required by all automatic reset starters to be sure the new lamp will light.

The new FS-400 G-E Watch Dog starter offers all these plus an added feature. This feature prevents the premature burnout of the lamps in the lead circuits of two- or three-lamp fixtures caused by instant start of the lamps before the lamp cathodes are adequately preheated . . . all this for a few pennies more. Wiring Device Department, General Electric Company, Providence 7, Rhode Island.

\*Registered Trade-mark of General Electric Co.

#### GENERAL 🍪 ELECTRIC

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#### Rights of Materialmen

(Continued from page 90)

principal shall fully perform the contract on his part and shall indemnify and save harmless the owner from all cost and damage which he may suffer by reason of failure so to do and shall fully reimburse and repay the owner all outlay and expense which the owner may incur in making good any such default and that if the principal for labor and materials, upon failure of which such person shall have direct right of action against the principal and surety under this obligation subject to the owner's priority, then this obligation shall be null and void, otherwise it shall remain in full force and effect."

In holding that here the materialmen might maintain an action for recovery against the surety on this performance bond the court said,

"Liability to all materialmen includes liability to those who sell directly to the contractor. We are not dealing with the language of a constitution or a statute. These are assumed to be written with great care that not a word be meaningless. Not so are many contracts, even standard forms such as this bond. Both contract and bond may be subject to a different interpretation in other jurisdictions which do not recognize the rights thereunder of unnamed third party beneficiaries."

In an action brought a few years ago by a hardware dealer of Emporia, Kansas, against a surety company the bond expressly provided, "No right of action shall accrue upon or by reason hereof to or for the use or benefit of anyone other than the obligation of the surety is and shall be construed strictly as one of suretyship only."

This surety bond also adopted by reference the building contract in which it was provided that the owner and the contractor should pay all labor and material claims. In sustaining the right of the hardware dealer to recover from the surety the court said, "It is well settled that a third party, although not a party to the contract and without knowledge thereof, may avail himself of a contract made by others for his benefit. That general principle, by the great weight of authority, is applicable to actions on bonds similar to the instant one. The laborers and materialmen clearly had a right of action on the instant bond."

In a suit by a supply company against this surety the defense was interposed that this materialman was not a party to the surety contract and hence, not entitled to recover for the unpaid material.

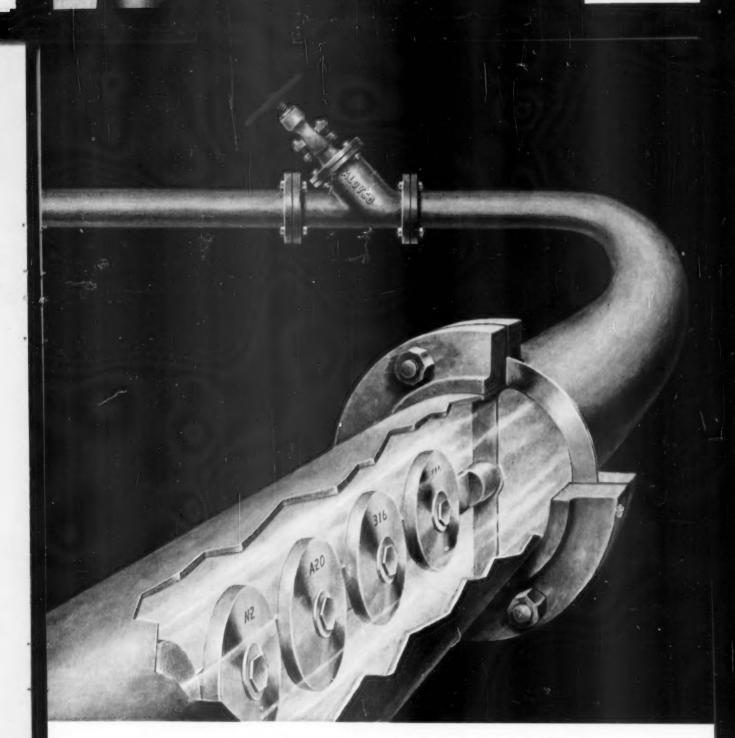
"Having undertaken to insure the performance of all the obligations of the contract," said the court, holding the surety liable to this materialman for the unpaid account, "if the surety intended to avoid contingent liability for the payment of materialmen it should have incorporated this exception in its bond. Where a surety for a contractor agrees in terms with the owner that the contractor will pay for labor and materials, those furnishing labor or materials have a right against the surety as third party beneficiaries of the surety's contract unless the surety's contract in terms disclaims liability to such persons."

This law granting to materialmen the right to recover from a surety on a performance bond for unpaid material claims has been summarized by an outstanding legal authority,

"In the case of a surety bond for the payment of money, if there is a promise to pay money to an ascertainable person, the fact that he is a third person who gave no consideration for the promise does not prevent him from enforcing it. The words used in building contracts and in accompanying surety bonds are now usually such that they are and should be interpreted as a promise by the surety to pay laborers and materialmen in case of default by the contractor."

#### Use Reader-Service Card Page 17

For More Information Circle No. 428 on Inquiry Card—Page 17→



#### Inside look at Aloyco Corrosion Engineering Service

This is a realistic illustration of an Aloyco line test—as it might be conducted in your plant as a regular part of Aloyco Corrosion Engineering Service.

Whenever there is no 'book solution' to a specific valve problem, we will prepare a test rack carrying a series of alloy specimens (discs above) to be inserted in your process line. Purpose is to pinpoint the alloy that will most efficiently stand up to the specific corresives under your actual line conditions.

Our sole purpose with the Aloyco Corrosion Engineering Service is to help you successfully solve corrosives handling problems. Our resources are the metallurgical experience, foundry skills and engineering knowhow we have gained in twenty-seven years as the world's largest specialist in Stainless Steel Valves.

Bring your corrosion problem to Alloy Steel Products Company, 1301West Elizabeth Avenue, Linden, New Jersey.







# Want to SAVE up to 70% of heating costs on your phosphate coating line?

# new Parker Cold Bonderite System does it!

Turn down the heat! Put most of your Bonderite line heat costs back in the till! Parker Rust Proof Company has developed a new Bonderite system for low temperature operation.

It includes a new cold alkaline cleaner that works beautifully at 70° and is effective in a temperature range from 60° to 120°. A new Spra-Bonderite, specially formulated to produce a superior coating at low temperatures, has been developed to work in conjunction with the new Parker cold cleaner.

With the new cold Bonderite system, savings are really sizable. Heat consumption in the line is cut by as much as 70%. Cost of the new Parker system is approximately equal to conventional alkali cleaners and

phosphate coating chemicals, so the savings in heat are practically all velvet. It is estimated that on an average automobile body line the savings in steam costs can run as high as 10 to 12 cents per body; on an average refrigerator line 4 to 5 cents per cabinet. Savings in B.T.U.s can mean savings in dollars.

The new cold Bonderite system has been production-tested in mass production plants. Its performance has amazed the experts. It's ready to go to work in your plant, saving you money, right now!

Why go on paying for heat you don't need? Start using Parker's new cold Bonderite system. A letter or phone call will bring a Parker man with full, money-saving details.

\*Bonderite, Bonderlube, Parco, Parco Lubrite-Reg. U.S. Pat. Off.

#### RUST PROOF COMPANY 2163 E. MILWAUKEE, DETROIT 11, MICHIGAN

BONDERITE corrosion resistant paint base BONDERITE and BONDERLUBE PARCO COMPOUND of metals

PARCO LUBRITE

TROPICAL wear resistant for friction heavy duty maintena surfaces paints since 1883





#### Typical Alloys Being Brazed With ALUMIBRAZE

Old Designation	New Designation		
25	1100		
35	3002		
525	5052		
545	5154		
615	6061		
625	6062		
635	6063		
665	6066		

A612 Casting Pioneer 40E Casting X2219 Casting

HANDY ALUMIBRAZE is manufactured by Handy & Harman under license from The Glenn L. Martin Company. Patent applied for. ADVANTAGES: Cost savings are immediate through the reduction of complex jigs and fixtures. Placement of the alloy is rapid, simple and sure. Alloy is preplaced in exact amount required, precisely where needed. It stays put during the brazing cycle. Even heating minimizes the possibility of warpage. And the soundness of HANDY ALUMIBRAZED joints, their strength and their corrosion resistance are equal to or better than joints made with conventional forms of filler metal.

HOW IT WORKS: Mixed with water to form a slurry, HANDY ALUMI-BRAZE is applied adjacent to the joints required to fill the joints and make fillets. Assembly is then baked at 1000°F to remove moisture. This leaves the brazing alloy powder firmly cemented to the aluminum surface, the flux serving as the cement. Assembly is then dipped in molten brazing salt. The flux cement itself has a higher melting point than either the brazing alloy or the brazing salt, but it is soluble in the molten salt bath. Thus, the brazing alloy is held in place even while melting until the cement has been dissolved by the molten salt. As the flux cement is dissolved away from the molten filler metal, the alloy runs into the joint capillary spaces and also forms a generous, smooth fillet. Send for Bulletin 23. It gives full details on this modern, cost-cutting development.

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gives you the complete Alumibraze Story. Send for your copy today.



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For More Information Circle No. 430 on Inquiry Card—Page 17

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BRIDGENIST CQUIM
PROVIDENCE & 1
EMICADO RE
CLEVELAND DINO
ETBOLT AND
COST ANDOLES CALLS
CORDAND CAMADA
TORONTO CAMADA

#### EGYPTIAN DEITIES. Fatimas and Harems



No, these aren't out of Arabian Nights, but were contemporaries of Murads Condaxes, Richmond Straight Cuts and Sweet Caporals - all popular cigarettes of fifty years ago. Their sale was still illegal in several states, but where you could buy them they cost from 10c to 15c a package of 20 down south (where the popular brands used Virginia to-bacco) to 15c to 25c a box of 10 up North (where straight Turkish tobaccos and cork tips were favored). They were a relatively new "fad" and considered by many to be objectionably "sporty".

In the ensuing fifty years the popular attitude towards cigarettes has changed considerably - and so have the cigarettes. As cigarette manufacturers have learned how to improve their product over the years, so have we learned a lot more about making better gears than anyone knew back in 1907. In fact, we've made a lot of progress just in the past ten or fifteen years. What about your present source of custom gears? A re-examination may show that it will pay you now more than ever to rely on Cincinnati Gear for your custom gear requirements.

#### THE CINCINNATI GEAR CO. CINCINNATI 27, OHIO

Fifty Years of "Gears - Good Gears Only"



More Information Circle No. 431 on Inquiry Card-Page 17

#### Requirements of A Surety Contract

(Continued from page 132) action, although the distributor neither manufactured nor packaged the preparation.

For further comparison, see in McCabe v. Liggett, 112 N. E. (2d) 255. Here the testimony showed these facts: A man named Huwe purchased a metal coffee maker from a retail dealer. Huwe had seen this type of appliance displayed in that particular store about a week before. The clerk handed Huwe the coffee maker packed in a sealed cardboard carton which he took away. This coffee maker consists of three parts, a lower bowl, an upper bowl, and a filter. Water is boiled in the lower bowl and under pressure of the steam which is generated the water rises through a tube into the upper bowl where ground coffee is placed. The purchaser, Huwe, used the

appliance two or three times complying with the written instructions which came with it. One morning the water began to boil and started to come up into the upper bowl. He waited for it to reach the top so that he could shut off the gas heat and remove the appliance from the stove. Suddenly it "blew up" in his face. The purchaser sued the retail dealer for heavy damages for severe burns sustained.

The counsel for the retailer contended that there could be no liability because he did not manufacture the device but merely sold it and that he had sold many of the same coffee makers, but no purchaser had previously complained that the coffee makers did not operate satisfactorily. Nevertheless, the injured purchaser offered in evidence the opinion of an expert that the area of the notches or perforations in the filter was inadequate to provide for the release of the pressure which developed from the boiling water, and that this area would be further decreased by the "congealing" of the coffee grounds, and that the pressure in the bottom section may build up to a point where it would have an explosive effect.

The higher court held the re-

tailer liable in heavy damages to the purchaser, saying:

"The sale carried an implied warranty by the seller that the appliance was a coffee maker of merchantable quality. If the coffee maker was so imperfect in design that it could not be used without the likelihood of an explosion it could be found that the appliance was not reasonably fit for making coffee and therefore not merchantable. The fact that the apparatus violently burst apart in the manner described showed that the accumulating pressure was not being released, and in the absence of explanation was itself evidence of a defective condition."

#### \$31,060 Damages

At a recent convention of retail dealers this legal question was asked: "If a purchaser of a new automobile is injured due to defects in the automobile, who is liable and for how much damages?" A higher court has rendered a decision which answers this question.

In Magee v. General Motors Corporation, 220 Fed. Rep. (2d) 270, the testimony showed facts, as follows: A man named Magee was 70 years of age when he purchased a new automobile. By statistics prepared by the United States Public Health Service his potential life expectancy is 9.42 years. He suffered severe injuries when the automobile ran off the road due to defective steering mechanism. He sued the automobile manufacturer and the lower court allowed his \$31,060 damages, although Magee's medical bills did not exceed \$75. The automobile manufacturer appealed to the higher court contending that the verdict was excessive and against the evidence. However, the higher court approved the verdict, saving:

"I am satisfied that an award of \$31,060 is commensurate with the degree of injury, pain and suffering."

#### Must Prove Food Inspection

Modern higher courts consistently hold that packers of food are legally obligated to exercise reasonable care to inspect the

(Please turn to page 310)



# It's your <u>final</u> cost that counts when you buy stainless steel plate and plate products

Don't be misled by the "lowest quote"—not if you want quality stainless steels with the lowest final cost in your shop. Put your confidence in the supplier who gives you what you want, the way you want it, when you want it.

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is filled by experienced men who take a personal interest in it.

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handling costs—pieces are properly cut to sketch

 You can deliver on schedule and get repeat business

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District Sales Offices in Principal Cities

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For More Information Circle No. 432 on Inquiry Card-Page 17

DECEMBER, 1957

307



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You'll quickly agree Riegel means uniform top quality . . . at competitive prices.

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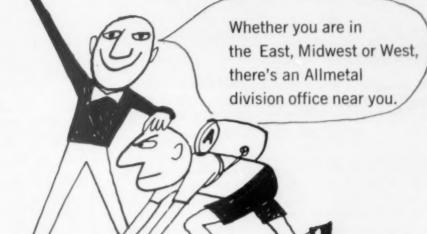
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RIEGEL TEXTILE CORPORATION
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For More Information Circle No. 434 on Inquiry Card-Page 17

# Why The Purchasing Agent In This Plant Selected TRUSCON COATINGS



# FLOORS, MACHINES, WALLS AND CEILINGS AND EXTERIOR OF THIS PLANT ARE TRUSCON PROTECTED . . . EACH BY A SPECIALIZED COATING DESIGNED TO PROVIDE MAXIMUM WEAR AND PROTECTION

By following the Truscon consultants' recommendations, the Purchasing Agent and Plant Engineer in this plant know that each piece of property and equipment receives the best protection that modern paint chemistry can offer.

Because of Truscon Laboratories' nearly 50 years experience and reputation in the field of specialized maintenance coatings, you, too, can rely on:

TOP QUALITY... Finest ingredients and best techniques of formulating characterize all Truscon products.

**DEPENDABLE PERFORMANCE** . . . All Truscon products undergo exhaustive field testing for wear, weathering, color retention and coverage, before they are placed on the market.

GOOD SERVICE AND FAST DELIVERY . . . A Truscon factory branch in your area assures complete inventories and trained personnel—immediate delivery and service are available to you at all times.

FREE CONSULTATION . . . Truscon consultants are factory trained in the proper selection of specialized coatings for all conditions—alkaline, acid, rust, moisture, etc., and are at your disposal at all times for consultation with your own staff.



For More Information Circle No. 435 on Inquiry Card-Page 17

#### Requirements of A Surety Contract

(Continued from page 306)

food, before it is packed, and eliminate foreign substances which may cause injury to consumers of the food.

For example, in Dillon v. William Company, 64 Atl. (2d) 525, the testimony showed that a company markets coffee in glass jars, and it is vacuum packed. One day a customer went into a retail grocery store and purchased a jar of coffee. When she placed her hand on the jar, in order to lift it out of the basket, the jar exploded and her hand was severely injured. She sued the company for damages.

During the trial the evidence proved that the explosion threw out fragments of glass, proving that the explosion occurred from a force generated from within the container. In view of this testimony the higher court held the company liable in damages to the injured woman, and said:

'Coffee, being an inert substance, could not of itself cause the pressure and explosion. Therefore something other than coffee was packed in the contents of the jar. Whatever may have been this adventitious substance, it was placed in the container with the coffee before it left the defendant's plant . . . . It was the defendant's duty to use reasonable care and by proper inspection to prevent any such matter (which would generate gas and cause an explosion) being in the apparently inert substance coffee. The evidence amply demonstrated that the foreign material was in the jar."

This court indicated that negligence of the company was presumed since the company introthat its employees had inspected the coffee before it was packed. In this respect the court said:

"Under the evidence, the only reasonable conclusion is that the accident was caused by the negliduced no testimony which proved gence of the defendant (packer)."

#### PLEASE USE INQUIRY CARD—PAGE 17

For More Information Circle No. 436 on Inquiry Card—Page 17→ PURCHASING

## White your own ticket —

0,1	MASS TERNATING CI	TEL.	
SERIAL	The second secon	STYLE	TOR .
TYPE	FRAME FRAME	H.P.	
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Speeds ..........Single speed, multi-speed, and variable speed.

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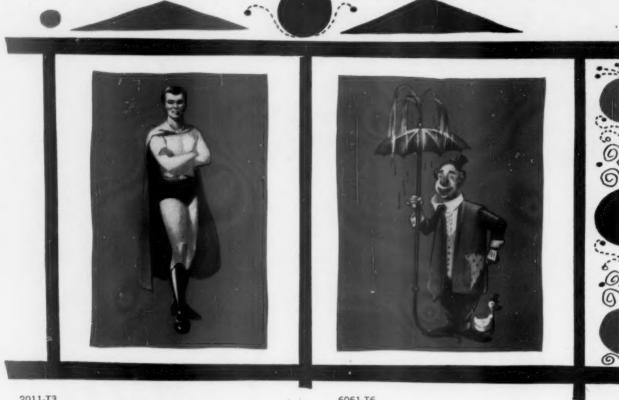
Power Drive Electric brakes (2 types)— 5 types of gear Features .......reduction up to 432 to 1 ratio. Mechanically and electronically-controlled variable speed units—fluid drives—every type of mounting.



ELECTRIC COMPANY DAYTON 1, OHIO



# ALCOA'S NEW COLOR MOVIE



2011-T3

Here's the "Lightweight Champion of the Machining World." Watch this free-machining aluminum alloy perform amazing feats of economy and versatility through a blizzard of fine, crisp chips. It's just the ticket for most screw machine products.

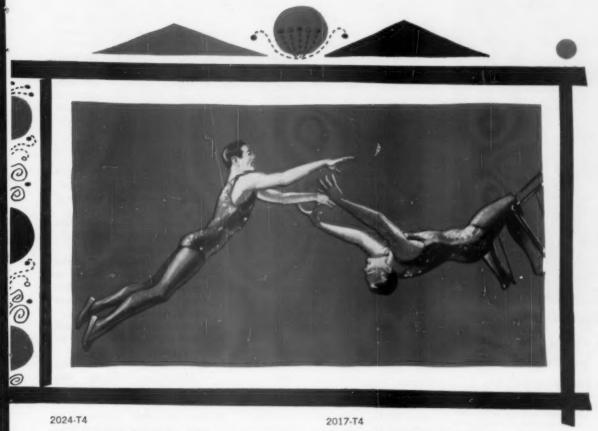
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The fabulous alloy that's unequaled where service calls for exceptional resistance to corrosion, suitability for welding or brazing. It's the most finishable of the aluminum screw machine stock alloys.

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Be sure to see these amazing alloys perform their spectacular feats of strength, economy, machinability, finishability and corrosion resistance. Determine a date for a showing to your group and contact your nearest Alcoa sales office. They'll confirm a show date for you and send the film to reach you in time for your meeting. No charge. Aluminum Company of America, 867-M Alcoa Building, Pittsburgh 19, Pennsylvania.

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The daring "Aircraft Alloy." Noted for its strength. Tops where tight, vibration-, strain- and wear-proof assemblies are a must.

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For More Information Circle No. 437 on Inquiry Card-Page 17

313

# RCA Industrial—Duty THYRATRONS



#### For dependable performance

...in motor controls ...in welding controls ...in relay controls

RCA Thyratrons are available in a wide choice of cathode-current and anode-voltage ratings to meet virtually every production-control application where thyratrons are used.

When you need thyratrons...gas or mercury-vapor types...triodes or tetrodes... your RCA Industrial Tube Distributor is set up to give you top-notch service on thyratrons—at any time.

New Reference Book (PG101-C) shows basic characteristics of RCA Power and Gas Tubesincluding Thyratrons. Free-from RCA Commercial Engineering, Sect. L-36-T, Harrison, N. J.





RADIO CORPORATION OF AMERICA Electron Tube Division Harrison, N. J.

on Inquiry Card-Page 17

#### Purchasing Sets The Pace

(Continued from page 124)

d. Operating supplies and parts, usage reports.

e. Status of stores inventory.

In addition, this program and system establishes the basis for mechanization of clerical accounting functions in receiving, invoice processing and inventory control.

Purchasing was in full accordance with the potential benefits to be gained from a mechanized purchase order writing system. Our enthusiastic support was given in preliminary studies and planning for this system.

In our analysis of inventory materials purchased for our multiplant and mining operations, we found a wide variation in nomenclature, commodity codes, units of measure and specification format. There were cases where items common to our seven different operations were requisitioned by seven different descriptions. There was no doubt that the system would only be successful if all potential benefits and advantages were developed and exploitedthis would be desirable from both the long range materials planning perspective and short range ma'erials requirements.

Purchasing had to do a selling job to the other responsibilities and departments concerned with inventory, accounting and using of materials.

In our discussion with other departmental groups, questions were raised regarding actual benefits to be gained compared to the time, effort and cost required. In a program of this type, actual savings and benefits cannot be measured in dollars, for the benefits have no tangible standards to be compared and measured against.

Our selling job was eventually successful and the program was started as a simultaneous and coordinated project with the processes required in the mechanized purchase order writing system. Both operations are under the administration of purchasing.

An essential element in a commodity standardization program is a system of classifying all supplies purchased and stored. Classification of commodities by major groups and sub-groups has been found to be the simplest method of bringing similar and related items together for review for possible standardization.

Once a commodity classification standard has been established as a guide, the standardization process begins with a compilation of lists of all items carried in stock. This will disclose instances of duplication, incomplete, obsolete, or poor nomenclature and specifications, and new or changed manufacturers' numbers and reference data.

The next step is research and development of a correct specification, nomenclature and format, standard ordering and/or packaging units, standard units of measurement, most economical buying quantity, and standard purchasing data for materials such as manufacturer, f.o.b. points, terms, and trade discounts.

#### **Advantages of Uniformity**

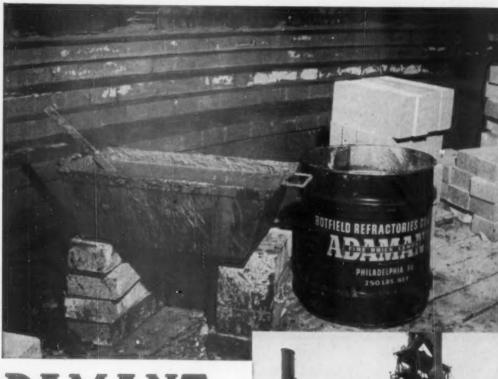
Some of the ultimate benefits which will result from standardization of ordering specifications are:

- Standardized descriptions and nomenclature will facilitate order placement.
- Interchangeability of items between plants within a geographic area, will be possible with subsequent reduction of inventories.
- A uniform base for order and purchase statistics will be provided.
- Standardization of common commodities will be emphasized and areas of action defined for proper control.
- The standard commodity code structure and mechanization of purchase data is a step toward the use of high speed data processing equipment which provides additional possibilities of cost reduction and control.

During the several years of planning for the system, we were advised that our central operations purchasing had commenced a program of commodity standardization and classification in collaboration with accounting groups. It was decided that we could

(Please turn to page 318)

#### THE CHOICE OF SEVERAL MAJOR STEEL PRODUCERS



## FIRE BRICK CEMENT

## ... FOR BONDING THE FIRE BRICK THROUGHOUT IN BLAST FURNACE REBUILDS

With today's high costs—protect your brickwork against spalling, gas penetration and slag attack... with the best fire brick cement available, ADAMANT.

ADAMANT is the only cement to give you maximum bonding strength, no shrinkage cracks, smooth, thin, economical joints, and proper heat resistance . . . designed for use with first quality and super duty brick.

Dependable quality, ton after ton, year after year . . . ADAMANT is also the only cement that will store for long periods of time without hardening in the drum . . . comes ready-mixed in air-tight drums of 100, 250 and 500 lbs. Complete details in our new Bonding Mortars Bulletin No. 3. Yellow Pages of 'phone directory have your nearest ADAMANT Distributor.

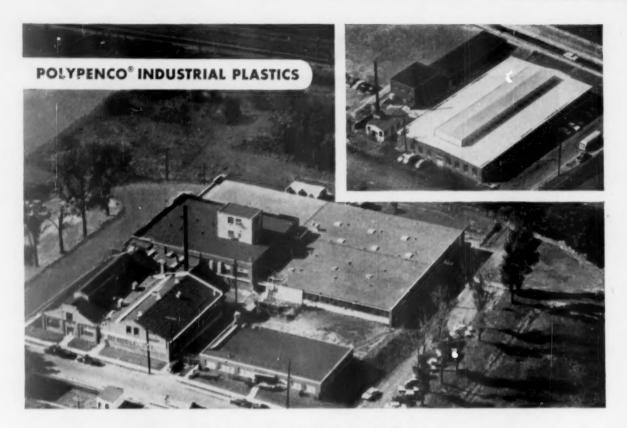


Here and above...showing the "inside" and "outside" of Blast Fornace belonging to one of the nation's foremost Steel Producers...note liberal use of famous ADAMANT Fire Brick Cement.



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THE POLYMER CORPORATION is today a leading supplier of industrial plastics, and is recognized throughout the world for extensive pioneering and developmental work. POLYPENCO Nylon, Teflon and other industrial plastics are produced under rigid quality controls, and are readily available for your engineering and maintenance applications from warehouses located throughout the country.

Whether you want helpful information...quick delivery...or technical assistance, you'll get the results you want by calling your nearest POLYPENCO representative. Write today for complete data on any of these products or services and the name of your nearest supplier.



#### NYLON & TEFLON® STOCK SHAPES

These POLYPENCO Shapes are designed for rapid, low-cost fabrication on standard metalworking tools.

POLYPENCO Nylon: rod, strip, tubular bar, slab, tubing.

POLYPENCO Teffon: rod, tubular bar, spaghetti tubing, large diameter thin wall tubing, sheet and slab.

POLYPENCO Q-200.5 (gross-linked): rod and plate

POLYPENCO K-51 (chiorinated): rod, strip and tubular bar

Distributed by The Polymer Corp. of Penna.



#### NYLAFLOW® PRESSURE TUBING

A specially processed polyamide tubing, used extensively for air, gas, oil, lubrication lines in many industries. Available in burst pressures of 1000 psi and 2500 psi. Flexible, strong, corrosion resistant, easily installed. Distributed by The Polymer Corp. of Penna.

For More Information Circle No. 440 on Inquiry Card—Page 17 316





#### FERROTRON® FERROMAGNETIC MATERIAL

A new powdered iron-filled plastic material for electronics available in rigid cores and flexible rod and tape. Distributed by The Polymer Corp. of Penna.

#### POWDERS FOR MOLDING AND PROCESSING

Nylasint\* nylon molding powders Nylasint\* nylon powders for cold pressing and sintering

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#### WHIRLCLADT COATING PROCESS

A new fluidized coating process using dry, finely divided powders for applying nylon, polyethylene and other coating materials to metals, ceramics, wood and other base materials.

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\*Du Pont Trademark †Polymer Trademark



For More Information Circle No. 441 on Inquiry Card—Page 17→
PURCHASING



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CRUCIBLE

first name in special purpose steels

Crucible Steel Company of America

Canadian Distributor - Railway & Power Engineering Corp., Ltd.

#### Purchasing Sets The Pace

(Continued from page 314)

further the benefits to be gained by attempting to standardize our commodity descriptions on a corporation-wide basis.

Our program of standardization is, in effect, correlating specifications at the division level to those being developed by the corporation group. This has reduced the amount of research that our purchase data personnel must do relative to manufacturers, catalogs and users' requirements. We were thus able to speed up our program and will have gained the advantages of greater scope in standardization.

The work has progressed even better than anticipated. Our correlating procedures, once developed, proved more than adequate. Both our commodity standardization program and related work in the mechanized system are about 60 per cent complete, after approximately one year.

Most of the benefits we men-

tioned previously have been realized. Duplicate and obsolete items have been eliminated; purchase costs will be reduced by being able to buy in standard lots; the most economical buying quantities will be keyed to each item; and exchange and transfer of surplus items among our operations will now be facilitated because identification is positive through standard specifications, commodity codes and nomenclature.

It was found, even in the early stages, that this review of our commodity revealed that approximately 22 per cent of the items in several commodity classes were eliminated because of duplications and obsolescence. We have found, additionally, that the use of standard item descriptions, nomenclature and industry standard numbers has enabled us to reduce the purchase costs of many items from 30 per cent to 40 per cent

We adopt industry standard numbers whenever such standards exist. For example—the Anti-Friction Bearing Manufacturers Association developed industry standard numbers which we are including in our specifications. Industry standard numbers give us flexibility in making our purchases. The industry standard number can be cross referenced to all equivalent manufacturers' numbers for that particular item.

#### **New Developments**

The industrial and technological developments in the past quarter century have advanced us into a new age which is characterized by a growing variety of materials and products. These are superseding older familiar types and are affecting virtually all the products and processes of industry. These new materials are the result of accelerated advances in the fields of physics, chemistry, metallurgy and electronics.

Many of these new materials and processes already have, or will have, far-reaching implications in our respective industries and professions. They will represent a new magnitude of cost and changes in production methods. Since we are in the midst of this revolution in materials, it is most

(Please turn to page 322)

#### here is how he did it..



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Low cost wipers are those which do not require a costly procedure of distribution and collection.

You save in labor costs when the worker can carry in his back pocket a wiper capable of performing a complete wiping operation without the necessity of returning to his bench for a noncotton material where many pieces are needed for the operation.

The materials providing these advantages are garment wiping cloths, mill ends and cotton waste.

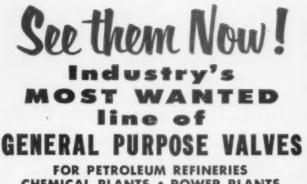
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For More Information Circle No. 443 on Inquiry Card-Page 17

# U.S.I. CHEMICAL NI

A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries

#### U.S.I. to Make Zirconium as Non-Pyrophoric Platelets

Reactor and commercial-grade zirconium, in the unique form of non-pyrophoric, nonhygroscopic platelets rather than sponge, will be supplied to government and industry from the U.S.I. zirconium plant at Ashtabula, Ohio, scheduled to come onstream shortly.

Platelets-irregular flake-like pieces about the size of dimes and quarters-insure greater safety during handling and shipping. Since they are classified as metal rather than as metal sponge, they are subject to none of the restrictions applied when the sponge form is handled. For safety reasons, the Interstate Commerce Commission requires that sponge be shipped in metal drums containing not more than 75 pounds, and that the sponge be contained in polyethylene bags and blan-keted by argon gas. None of these restrictions apply to platelets.

Zirconium platelets can be compacted for melting as easily as sponge and with virtually no waste. They are of extremely high purity, being almost completely free of sodium, magnesium, chlorides, hydrogen and moisture. Freedom from impurities provides for a much cleaner melting operation for the user.

#### Production Goal Expanded

Originally scheduled to produce 1,500,000 pounds a year, the plant is now slated to turn out 2,000,000 pounds annually. Under a contract signed on May 1, 1956, 83,000 pounds a month are committed to the Atomic Energy Commission. An equal amount will be offered to industrial users

U.S.I. is now quoting prices of \$4.75 to \$6.50 per pound, depending on quantity, for its hafnium-free zirconium platelets as com-

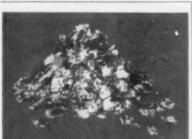
#### New Products, Packages Made 1956 Aerosol Industry's Biggest Year

Aerosol Hair Lacquers Sales Leader, CSMA Figures Show

Results of the annual survey of the aerosol industry by the Chemical Specialties Manufacturers' Assn. show that 1956 was the biggest year yet for the 10-year-old industry. Unit sales were 320 million units, an increase of 33% over 1955, and 73% more than the 185 million units turned out in 1954.

Contributing to the upswing was the sharp sales rise of aerosol hair sprays. A relative newcomer to the field, hair sprays have even outdistanced insecticides in the race for top sales spot. In the category of "Hair Lacquers", CSMA reported 1956 sales of nearly 80 million units. This figure is 25% of total sales for the industry.

The Alcohol and Tobacco Tax Div. of Internal Revenue reported that last year 2,541,000 wine-gallons of alcohol went into hair and scalp preparations. This compares with 1,682,000 gallons for 1955, an increase of 51%. While much of this alcohol went into preparations other than aerosol-packaged sprays and lacquers, it had been evident to industry observers that the aerosol market accounted for the bigger share of the gain.



Typical Zirconium Platelets

pared with the present price of \$12.00 per pound for sponge. This is due to U.S.I.'s eco nomical sodium process-the first semi-continuous process for making zirconium-which requires a lower initial investment than the conventional magnesium proce

Commercial zirconium which is not hafniumfree and which is suitable for non-nuclear uses will sell for about \$1.50 less per pound.

#### Industry Will Get Hafnium

The forthcoming plant will also have 20,000 pounds of hafnium as hafnium oxide or sponge available for industrial use. Hafnium, an excellent neutron absorber, is employed in atomic reactors as a control rod material.

#### New Packages Big Sales Factor

Influencing the upsurge in aerosol sales are such comparatively recent packaging innovations as the glass aerosol. In many cases, the desired safety factor is achieved by encasing the glass container in an attractive outer con-

tainer molded of polyethylene. Thus, two U.S.I. products, ethyl alcohol and polyethylene, have played an important role in the phenomenal growth of the aerosol in-dustry. Anhydrous ethyl alcohol is virtually a universal ingredient in hair aerosol formulations, and is widely used in other cosmetics now sold in aerosol form. Polyethylene, as noted, is an important packaging component.

#### PRODUCTS OF U.S.I.

#### **ALCOHOLS**

Ethyl Alcohol (Ethanol): Specially denatured — all regular and anhydrous formulas, Completely denatured — All regular formulas for industrial use, anti-freeze. Pure alcohol—USP 190°—Absolute, N.F., taxfree, taxpaid.

Butanol (Normel Butyl Alcohol): Latent solvent for nitrocellulose, solvent

for ethyl cellulose, many resins, many syntheses.

Amyl Alcehol, Refined: Fine chemicals, pharmaceuticals.

Fusel Oil, Refined: Blend of amyl alcohols refined by chemical treatment,

Proprietary Denatured Alcohol Solvents: SOLOX® — General-purpose, FILMEX® — Special, authorized for certain industries. ANSOL® M — Anhydraus, special blend for lacquers, resins, etc. ANSOL® PR—Anhydrous, special blend with higher ester content and solvency for lacquers.

#### OTHER PRODUCTS

PETROTHENE® Polyethylene Resins Inergenic Chemicals: Sodium, Chlorine, Caustic Soda, Sodium Peroxide,

Sodium Sulfate, Sulfutic Acid, Phosphatic Fertilizer Solution (Wet Process Phosphoric Acid) Ammonia, Nitrogen Fertilizer Solutions, Ammonium Nitrate. Zirconium Oxide, Zirconium Tetrachloride, Hafnium Oxide,

Esters, Ethers and Ketones: Normal Butyl Acetate, Dibutyl Phthalate,
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Diatoliii. Intermediates and Fine Chemicals: Acetoacatarylides, Dimethyl Hydrazine, Ethyl Acetoacatote, Ethyl Benzoylacatate, Ethyl Chloroformate, Ethylene, Ethyl Chloroformate, Ethylene, Ethyl Chloroformate, Ethylene, Ethylen

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Among the various gases in the earth's atmosphere, argon is one of the rarest—and most uncongenial. It is such a poor mixer that it is never found in chemical combination with other elements.

But scientists at LINDE reasoned that, because argon doesn't combine with other elements, it could be effectively used to protect other materials from impurities and contamination.

Today, LINDE argon protects the tiny filaments in electronic tubes, helping to make rocket and jet plane mechanisms, radar, and your television set operate dependably. In the welding of metals for use in rockets, missiles, and aircraft—or in the production of titanium—argon is the "invisible curtain" protecting the metal from impurities.

LINDE argon, 99.99 ++ per cent pure, is as close to you as the nearest highway or railroad track. A nation-wide, flexible distribution system assures satisfaction of argon requirements for the factory or the laboratory -- in any volume, whenever and wherever needed.

For more than 50 years, LINDE has been extracting gases from the atmosphere... finding better methods for their practical use. If your industry, plant or shop, has a special problem involving the use of argon, oxygen, or nitrogen, or the equipment they require, LINDE can help you. For specific information, call or write your nearest LINDE office.

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Start heat treating high speed and carbon steels while other furnaces warm up. Powerful burners in this efficient furnace get heat up to 1300°-2350° F. range in minutes. Temperatures accurately and quickly regulated. Ratchet-operated door opens upward — no need to open fully every time. High temperature refractory-lined firebox keeps heat uniform — 7" by 13" by 16½". 200,000 BTU's per hr. Carbofrax hearth, G.E. Motor and Johnson Blower included ..... F.O.B. Factory, \$358.00

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For More Information Circle No. 446 on Inquiry Card-Page 17



#### For More Information Circle No. 447 on Inquiry Card-Page 17

#### Purchasing Sets The Pace

(Continued from page 318)

appropriate for all of us to consider (and temper our judgments) certain obvious limitations of standardization applied with immature foresight. These are:

1. Standards can sometimes retard developments in methods and technological progress. They should be flexible enough to allow progress or modifications which may be advantageous to progress.

2. When it appears that basic research on a new product has been completed with no major changes in sight, then standardization can be effected advantageously.

Purchasing men in all types of companies and industries can contribute a great deal to standards work. The most important single objective of all of us interested in standardization is to communicate progress and new development to our associates in our field, and to those we cooperate with in our own company.

#### Coated Abrasives

(Continued from page 98)

flexible so they are well adapted to contour sanding as found in the furniture industry.

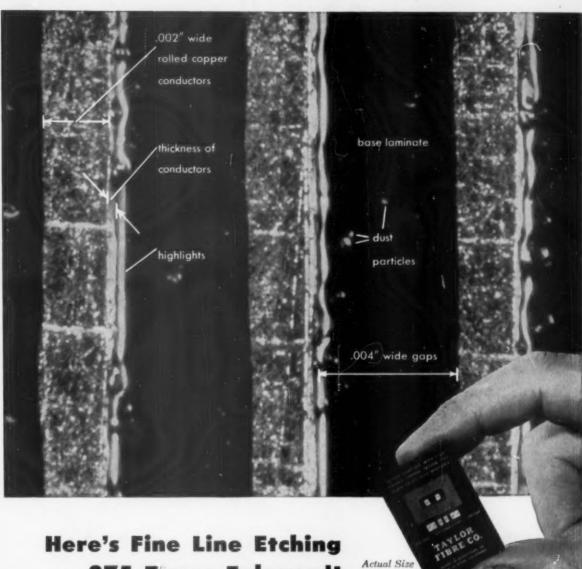
#### Wear of Coated Abrasive

A coated abrasive product can lose its abrasive properties by any one of a combination of the following ways: attrition, fragmentation, or loading.

Attritious wear is the dulling or rounding of the abrasive cutting edges by friction or chemical reaction with the work. Fragmentation occurs when the abrasive grain breaks and thus exposes new cutting edges. The ideal belt would combine both types of wear. First the cutting edges would become dull and then as a result of the increased friction, fractures would occur revealing sharp new cutting edges.

Unfortunately, most abrasives wear predominately in one way

(Please turn to page 326)



## ... 375 Times Enlarged!

This is what Taylor means by better printed circuits . . . the unretouched photograph above is an enlargement of the miniature etched test coil shown at right. Here is a dramatic illustration of exactly what Taylor means by saying rolled copper-clad laminates give you better printed circuits. Enlarged 375 times, this photograph shows how the .002" wide conductors are parallel and free of pits, pinholes and lead inclusions.

Here's proof of why you'll be satisfied with your printed circuits . . . if they're made with Taylor copper-clad laminates. You're assured of a uniform material, offering consistently satisfactory etching ... better production rates.

For more detailed information on Taylor copper-clad laminates . . . for a discussion on how these laminates can help you produce better printed circuits . . . contact your nearest Taylor sales office.

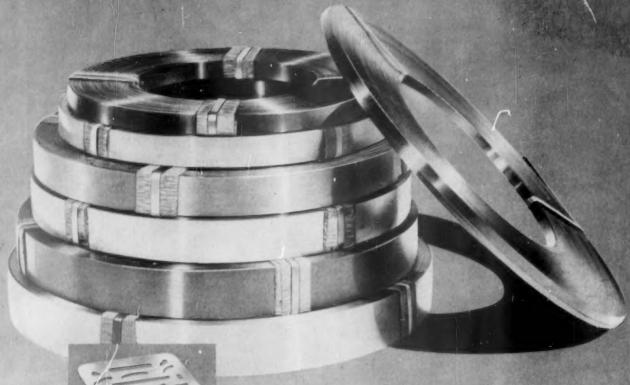
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## The Trend is to "Tailored" Steels

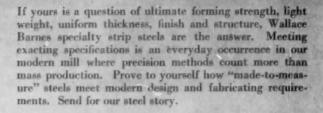


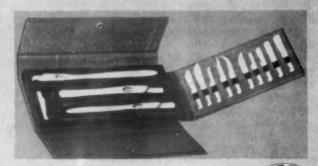










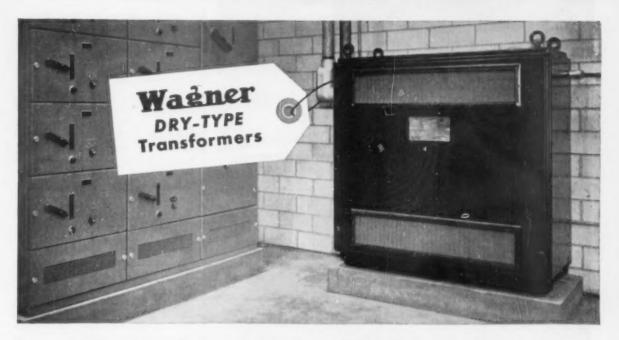


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ALSO MAKERS OF SPRINGS . WIRE FORMS . SMALL STAMPINGS





#### Put the right voltage where you need it!

NO EXPENSIVE RE-WIRING. Wagner dry-type transformers, when installed close to your machines, portable tools, and lighting circuits, give you the right voltage for use directly from 460 or 600 volt power lines. No re-wiring is necessary -line losses are reduced-installation costs are low.

SAFE TO USE-EVEN IN HAZARDOUS AREAS. You need no fireproof vaults or other protective enclosures, since Wagner dry-type transformers meet all safety requirements for indoor installation. These transformers are liberally designed to carry overloads safely in emergencies.

#### PROVIDE FLEXIBILITY FOR CHANGING REQUIREMENTS.

Dry-type transformers, 3 through 300 kva, are built with Wagner Form W core and coil assemblies. This design permits less weight per kva with correspondingly small cases that are easy to install -- easy to move whenever changes in plant facilities are required.

ECONOMICAL TO MAINTAIN. These units have no liquids, valves, gaskets, or gauges to cause maintenance problems. The totally-enclosed types are completely sealed from all contaminating materials by sheet steel cases. Maintenance is reduced to the minimum.



Single-phase, 150°C Rise. 3 through 50 kva. Silicone insulated, totally-enclosed, non-ventilated. For indoor or outdoor use. 80°C Rise -15 through 100 kva. For indoor use only.



Three-phase, 80°C Rise. 9 through 300 kva. Ratings through 30 kva are suitable for indoor or outdoor use. Larger ratings are for indoor use only.



Single-phase, 55°C Rise. 1, 11/2 and 2 kva. For indoor or outdoor use. Bulletin TU-57 gives full information. Write today.

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-For More Information Circle No. 449 on Inquiry Card-Page 17 For More Information Circle No. 450 on Inquiry Card-Page 17 DECEMBER, 1957



Production up/costs down

#### PERM-A-CLOR, NA

(TRICHLORETHYLENE)

When specifications are set down by a customer they must be met. CHASE BRASS & COPPER CO. has met them in manufacturing straight-length copper tube for air conditioning and refrigeration units, using new DETREX Perm-A-Clor\* NA.

In making copper tube, customer specifications state that inner surface residue must not exceed two me per square foot. A DETREX Degreaser was installed in which new DETREX Perm-A-Clor\* NA (Trichlorethylene) is employed as the solvent. With this installation, residue can be reduced to 0.5 mg, with the work coming through clean and bright.

In men, methods, materials and machines—in every phase of metal cleaning and processing—DETREX shows the way to increased production and profit. Let your DETREX representative show you why DETREX, pioneer in the field, is today the recognized leader.

\*Perms-A-Clor is the registered treasurers of

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CHEMICAL INDUSTRIES, INC.

BOX 501, DEPT. S-907, DETROIT 23, MICH.

#### Coated Abrasives

(Continued from page 322)

or the other. Sharp, brittle grains such as silicon carbide, flint and garnet fracture readily and if used on tough substances would be quickly worn out. The tough, blocky grains of aluminum oxide and emery wear by attrition. Once the longer grains become dull, their inability to fracture and expose new cutting surfaces makes them useless. Unless they tear out from the backing, exposing the unworn shorter grains, the whole product becomes useless.

Loading is caused by the lodging of the grinding swarf between the abrasive grains. This reduces the cutting effectiveness of the grains. Additional friction caused by loading of the belt results in heating of the belt and workpiece. Loading is more common when abrading soft materials such as wood and aluminum.

#### Theory of Abrasive Cutting

The cutting action of coated abrasives is like that of multiple point cutting tools. Each grain acts as a single point tool.

The main difference between the two methods of cutting lies in the randomness of orientation of the abrasive grains in a coated abrasive and the different geometry of various grains. In a multiple point cutting tool, each cutting edge is accurately located and precision ground to a predetermined shape.

The electrocoating process minimizes the randomness of orientation of abrasive grains. It helps present the grain to the work in the most favorable cutting position, i.e., end-on.

The natural geometry of various grain types is employed to obtain desired types of stock removal and finish. The silicon carbide grain has the longest cutting edges and side clearances of all abrasives. It is a hard, sharp grain but because of its brittleness, it is not suited to cutting tough materials. It is best used on low tensile materials such as glass, plastics, leather, cast iron, aluminum.

For More Information Circle No. 451 ←on Inquiry Card—Page 17

## ANNOUNCING!

## VICKERS New "" Temperature and Pressure Compensated

FLOW CONTROL VALVE



VICKERS FIRST

FOR OPERATING PRESSURES
UP TO 2000 psi



#### TEMPERATURE COMPENSATED

Constant feed rates all day long with same throttle setting because throttle automatically compensates for changes in oil temperature. The compensator mechanism is simple in design and durable.



#### PRESSURE COMPENSATED

Constant feed rate throughout entire cycle because built-in pressure hydrostat automatically compensates for load changes.



#### SINGLE THROTTLE COMPLETE RANGE ADJUSTMENT

Greater flexibility because valve is adjustable within entire flow range of 5 to 1000 cubic inches per minute.

For years the Machine Tool Industry has been asking for a combination Temperature and Pressure Compensated Flow Control Valve to insure CONSTANT FEED RATES. Now for the first time it is available as a production unit at a reasonable price.



## THESE EXCLUSIVE FEATURES that mean

Optimum Tool Life and Better Work Finish:



#### REVERSE FREE FLOW AS STANDARD FEATURE

A standard feature which permits reverse free flow (up to 1400 cu. in. per min.) from outlet to inlet port by-passing control elements.



#### TAMPER-PROOF ADJUSTMENT

Retension of original feed rate is assured because a set screw prevents inadvertent throttle movement and a cover over the set screw can be locked in place.



#### INTERCHANGEABLE

This new valve replaces 12 previous models and it is interchangeable with all of them, also the drain connection is eliminated on the new valve to simplify piping.



#### GREATER ECONOMY

No need to stock several valves for wide range of flow rates. Drain connection is eliminated, piping costs are reduced.



#### MAXIMUM RELIABILITY AND ACCURACY

Design of temperature and pressure control components assures maximum circuit reliability and extreme accuracy of feed through a range of 5 to 1000 cubic inches per minute.

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ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921



(Continued from page 78)

ing the \$500. But, on the other hand, why risk \$50,000 worth of business particularly when you've got competitors ready, willing, and able to take over where you left off. (Competition apparently is a very important factor in determining the amount spent on gifts; the survey shows the big spenders usually are small companies in highly competitive industries.)

#### A Few Do It

It takes guts to break a well established custom—especially when, if you're in top management, you're on the receiving end as well as the giving end. But feeling is so strong against it in many companies, that they've done it. Take the case of J. M. Huber Co., which is discussed in detail in the article following this one.

"The only way to control gift giving is cut it out completely," says the vice president of a materials handling concern. "We passed out gifts to everyone and his brother for years. We woke up five years ago when we cut out the practice completely. At first, there were grumbles and even a few veiled threats. We just ignored them and it turned out we didn't lose a nickel's worth of business—and practically all of our customers (particularly P. A.'s) wound up applauding our move."

"Many sales people forget," says another sales manager, "the changed stature of P. A. The Purchasing profession has been upgraded to such an extent that practically all the people in it are not looking for handouts and would be insulted if any were offered."

#### What's So Immoral?

Just about everyone in sales and purchasing agrees that a really big gift—particularly cash—is, in effect, a bribe. But beyond this point, opinions vary: Here are some nct-too-uncommon views on business gift morality:

1. A Buyer: "I wouldn't think of accepting any sort of Christmas gift from a supplier with whom I'd never done business. But if a supplier I've done business with for a while wants to send me something at Christmas that's O. K. After all, he's just expressing his appreciation for the business he's already got, not the business he's going to get."

2. A sales manager: "We don't give any gifts as a company because we would wind up distributing something on a mass production basis and this wouldn't be in the true spirit of Christmas. Instead, we let our salesmen pick out something particularly suited to the needs of the cus-

tomer. We think gifts for the whole family are in much better taste."

Both the buyer and the seller quoted above are confused as to why a Christmas gift is bad. If a supplier customarily expresses his appreciation for the business he gets, what difference does it make whether he does it before he gets the order or afterward?

The sales manager who abhors the commercialism of the "mass production" gift really has no objection to gift-giving—and he's a hypocrite when he associates his company's efforts with the Christmas spirit. He prefers "personalized" gifts because they're more effective. As a result, they're more to be condemned than the mass production variety (which in a few cases may even hurt sales since they can annoy rather than please the recipient.)

#### Who Pays for Gifts?

As is obvious from the above, views on business gift merality vary. Some P. A.'s flatly refuse to accept any gifts. Others have a less strict approach. "Anyone who thinks I'm going to be influenced by a \$5 necktie is crazy," says one buyer. Another buyer points out that "if you buy on a straight competitive basis, you can hardly be influenced in your buying decisions by Christmas gifts from suppliers."

Although it's true that cases where buyers are influenced in placing business are the exception, it's also true that money spent for gifts is charged to sales expense and ultimately this is reflected in prices. In other words, executives who accept business gifts from suppliers are, in effect, granting themselves increases in compensation. The money spent on the gifts is passed along in the form of higher prices to customers.

This is why those who are against gifts point out that the buyer who accepts them is in effect stealing from his own company. This is true only in broad over-all sense, however. The buyer won't get lower prices if he refuses to accept a turkey from one of his suppliers. The \$8 or \$10 cost saving to the vendor is just too trivial. But if all buyers and other personnel in all companies dealing with that vendor didn't accept turkeys, the cost saving might be big enough to permit that vendor to lower prices. But, of course, in a competitive market, that vendor wouldn't cut prices unless others in the industry did. So, although business gifts are reflected in over-all prices, it doesn't make too much difference whether a given company has a no-gift policy or not as far as its prices from suppliers are concerned.

The only exception to this is the case where practically all of a supplier's business is with one concern. Then every penny spent on business gifts is passed on in the form of higher prices. That's why the government takes such a dim view of the gifts and entertainment in the aircraft and electronics industries, where it's the dominant customer.

(Please turn to page 330)



## RONSON produces the First Electric Shaver with 2 Separate Cutting Heads

Ronson calls their new "66" Shaver "the most revolutionary electric shaver ever designed"—and offers strong evidence to support this claim. For one thing, it is the first electric shaver with an extra cutting head, called "Super Trim", which does every trimming job, from sideburns to mustache.

When any manufacturer is out to break precedent, and still sell his product at a competitive price, he needs every bit of designing and production skill he can find—anywhere.

Ronson found these in generous abundance at Mt. Vernon. Three of the vital parts of the "66"—the head frame and the plate covering the "Super Trim" blades (zinc castings), and the motor chassis (an aluminum casting)—were designed to obtain the special advantages of die casting; thin wall sections of great strength and rigidity, negligible machining, smooth finish, high speed production, low cost.

Says Ronson: "These parts are highly vital to our electric shaver. The cutting mechanism depends on the head frame for its accuracy of mounting and rigidity while cutting. The chassis on which the motor is built is of course the heart of the shaver's power system, and a very accurate casting is necessary for the job."

These advantages, important to any manufacturer, stem directly from the way we are organized here at Mt. Vernon. We have both the facilities and the complete die casting service it takes to produce parts like these, in any quantity, at minimum cost. We have 200,000 square feet of the most modern equipment for making dies and for die casting aluminum and zinc. And Mt. Vernon service comprises completely coordinated designing, die-making, casting, and machining, all under one roof.

It will pay you well to bring your production specifications to us. We may show you, as we did Ronson, the way to important cost reductions and improved products.



SALES REPRESENTATIVES
STAMFORD, CONN.—Mr. Anker Anderson, Cascade Road
GUILDERLAND, N.Y.—Mr. David H. King, 75 Willow St.
BALTIMORE, MD.—Carey & Gordon, 919 St. Poul St.
CLEVELAND, OHIO—Mr. Grant Eller, 6 East 194th St.

EAST ORANGE, N.J.—Mr. George E. Mahl, 37 So. Munn Ave. ROCHESTER, N.Y.—Mr. William Souers, 101 Briordiff Rd. SKANEATELES, N.Y.—Mr. Jerome J. Theobold, 9 E. Genessee St. BALA-CYNWYD, PA.—Mr. O. T. McMaster, Llamberris Apts., C-1 BOSTON, MASS.—Mr. James Cleary, 61 Exeter Street

(Continued from page 328)

So you can't argue too much with the buyer who says "why shouldn't I accept a shirt from a supplier with whom I've enjoyed friendly dealings? It's certainly not going to influence me. Nor is it going to affect the prices I pay. And, you certainly would feel awfully foolish returning such a small gift back to the supplier."

#### **Distribution Problems**

Even if gifts don't influence buying decisions and their costs can't be directly deducted from prices paid, their distribution is still a headache to many recipients. One person who happens to deal with a lot of suppliers prone to gift-giving will get a huge pile of loot at Christmas. Most of the gifts are more of a nuisance than anything else. (One poinsettia plant is fine; but with six your house begins to look like a funeral parlor.) But to the fellow working in the next office who gets nothing from suppliers even though he might have a more important job, it looks like there's no justice. One P. A. has licked this problem. "In my opinion, all Christmas gifts to our personnel from suppliers are really expressions of appreciation to the company not to individuals. Therefore, we treat them as gifts to the company. Everything received from suppliers goes into a pool and we all get a chance to draw for the gifts. Everyone shares equally as a result, and gifts from suppliers then become

sort of an over-all fringe benefit of our company Christmas party." The P. A. didn't say so but he's actually successfully licked any onus that may be attached to receiving gifts. How can one be influenced by a gift he doesn't even keep?

This "socialistic" approach is probably the best solution to the gift problem. With it, there's no chance of the gift actually doing the supplier much good. And if the supplier continues to send gifts, no buyer need be put in the embar-

rassing position of returning them.

The fact is gift-giving can only be stopped if it becomes really unprofitable. Until it does, P. A.'s and sales managers might just as well live with it. Perhaps the most effective way to stop the practice would be legislation prohibiting gifts from being deductible as expense on corporate income tax returns. Both P. A.'s and sales executives are almost universally opposed to such regulations. As one sales veep put it, "we're regulated now to the point where you've got to fill out some form in triplicate every time you make a move. Let's have fewer regulations so we can spend more time on productive business." Legislation of this sort would pose many problems. For example, a lot of business entertainment really provides a framework for transacting business which neither party is able to conclude during office hours. Since there appears no way to legislate gift giving out of existence, it looks as though it will be a problem which will still be discussed years from now.



Write Dept. 57-L5

\*Trademark





SBS WATERLESS WASHSTATION Brings the Washroom to the Worker"

For More Information Circle No. 454 on Inquiry Card-Page 17

### Convair helps improve plant hygiene with SBS-30 waterless skin cleanser

In this ultra-modern plant are produced many of Democracy's air defenses. Here, too, is achieved an ultra-modern plant hygiene program with the help of SBS-30 Waterless Skin Cleanser.

To maintain cleanliness on this priority production, Convair has installed SBS-30 Waterless Skin Cleanser dispensers in "difficult soil areas". SBS-30 affords this fast, safe and thorough "on-the-job" way of cleaning that requires no water, plumbing or complicated installation.

Wherever they are installed, SBS-30 Waterless Skin Cleanser dispensers help Convair to produce savings through greater "on-the-job" efficiency. Man-hours are saved by reducing the number of trips to distant wash areas. The incidence of industrial dermatitis is reduced the output of the control of through improved personal hygiene.

Why don't you, like Convair and hundreds of other industrial leaders, take a serious look at SBS-30 Waterless Skin Cleanser. WRITE TODAY—we'll rush complete, detailed literature.



#### Order Fittings The Safe Way - By Capacity!

When you're ordering and using fittings you're only interested in capacity. Hook numbers or shackle sizes mean nothing as far as actual work-ability is concerned! That's why the revolutionary new Crosby-Laughlin\* "Load Rated" Fittings line is now cataloged and identified by "safe working load" capacities.

That's not all! This revolutionary new "Load Rated" line offers important safety features. New metal alloys have greatly increased working capacities. For example: new Crosby-Laughlin "Load Rated" Hooks offer capacities from 3/4 to 150 tons, and they're guaranteed against breakage . . . forever; size for size, new Crosby-Laughlin "Load Rated" Shackles offer 50% more working capacities than common shackles.

You can be sure you're getting new Crosby-Laughlin "Load Rated" Fittings because they're painted red—the familiar color you've always seen on famous, dependable Crosby Wire Rope Clips and "Load Rated" Blocks. For safety's sake, order—and be sure you receive—the RED fittings that positively indentify genuine Crosby-Laughlin "Load Rated" and Lebus 100% Drop Forged products. It's the world's most complete line of drop forged fittings for wire rope and chain!





#### NEW CATALOG

LISTS COMPLETE

You'll want this brand new Crosby-Laughlin-Lebus catalog to order your "Load Rated" fittings line. More products—more data are contained in this larger catalog that lists over 2000 items in the broad Crosby-Laughlin "Load Rated" line. You'll find detailed capacities, specifications and dimensional data on Crosby "Red U-Bolt"\* Clips, Crosby "Load Rated" Blocks, Crosby-Laughlin "Load Rated" Fittings, Lebus Loadbinders and Snatchblocks. If you use any type of fittings for wire rope or relain you'll want this new catalog. of fittings for wire rope or chain, you'll want this new catalog—and the wide line it represents. It's free and available now at construction and industrial equipment distributors and at mill supply mouse.

States and Canada. Or, it's yours by writing direct to:

\*Registered Trademark

15BY-LAUGHLIN Division

FORT WAYNE 1, INDIANA

For More Information Circle No. 455 on Inquiry Card-Page 17

#### 16 Ways to Evaluate Purchasing Performance

(Continued from page 88)

of procurement and evaluate the department's ability to buy at these prices,

- Data on sales of scrap materials.
- Record of investment in inventories and inventory turnover.
- Tables or formulas showing the economical size of an order to promote inventory and procurement efficiency.
- 16. Total of business in dollars done with each vendor.

Cost of collecting the information must be weighed against the value of the information. If the information is used effectively, it can improve efficiency and more than pay for its cost of compilation. Many of these records are a necessity if the purchasing operation is to be guided effectively.

From the basic purchase order and the change notices, two main breakdowns of information can be made. The first is the commitment report showing by commodity breakdown the dollars of purchases adjusted by decreases and increases as the result of change notices. The second breakdown is by procurement management information. This covers weekly information on purchase order placement by Buying Group and by sales order. Monthly summaries are prepared to show numbers and dollars of purchase orders placed in dollar categories as \$0.00 to \$9.99, \$10.00 to \$99.99, \$100.00 to \$999.99, etc. Total dollars and orders placed with each vendor and the subtotals for business done with Big and Small Business.

Such records are important if a worthwhile evaluation is to be made. They show where you were, where you are and only on such information can you plan where you are going. With such information, policy changes can be promptly made or progress revised.

PRINTS FROM
MAY, 1957 AVAILABLE
\$1.00 PER COPY
10 COPIES OR MORE
50 CENTS EACH

## Industry's complete source-finding service — In one handy volume

- 1—PRODUCT SUPPLY SOURCES —1,266 pages of worthwhile sources for practically everything used in industry—more than a quarter million listings—arranged alphabetically.
- 2—CHEMICAL SECTION—An ingenious, special section, showing by number code the makers of chemicals used industrially.
- 3—MECHANICAL DATA SEC-TION—Handy tables and formulas—exclusive with CMPD.
- 4—TRADE NAME INDEX—Trade names of industrial products, A to Z, with name and address of the maker.
- 5—ADDRESS SECTION—A to Z list of manufacturers who supply industry—name, address, products —with handy letter code showing size of firm, based on employment.

#### CONOVER-MAST PURCHASING DIRECTORY

205 EAST 42nd STREET NEW YORK 17, NEW YORK

#### **BUYER'S & SELLER'S MART**

Contract Work

Equipment For Sale

**Employment and Business Opportunities** 

Send orders to: CLASSIFIED DEPARTMENT

PURCHASING

205 East 42nd Street, New York 17, New York

#### RATES

Undisplayed	(set	solid)							*		 	90€	line
Positions Wo	nted		 *									45€	line

Displayed ...... \$8.50 inch

#### REQUIREMENTS

Undisplayed (want ad style), minimum charge 4 lines, prepaid. Figure forty-four letter spaces (five average words) to a line. Add one line for box number address; replies forwarded without charge.

Discount of 10% for twelve consecutive displayed insertions. Forms close 15th of month preceding date of publication.

#### MACHINERY AND CONSTRUCTION BUYER

Integrated Multi-plant Wisconsin Paper Manufacturer has opening for graduate engineer to handle machinery and construction purchasing. Preferred age 25-32.

Write Box 1536, Purchasing, 205 East 42nd Street, New York 17, New York

#### POSITION WANTED

College grad., 8 yrs. diversified purchasing experience especially M.R.O. items, mobile equipment, and purchasing administration. 28, married, 2 children. Willing to relocate. Write, Box 1534, Purchasing, 205 E. 42nd St., New York 17, N. Y.

PURCHASING AGENT. 7 years heavy sheet metal experience. Buying of capital equipment, raw materials and M.R.O. supplies. College graduate and legal background. 50 mile radius N.Y.C. Write, Bóx 1532, Purchasing, 205 E. 42nd St., New York 17, N. Y.

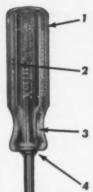
PURCHASING ASST. MARRIED 28 MBA CANDI-DATE DIVERSIFIED PURCHASING AND AD-MINISTRATIVE EXPERIENCE. WRITE, Box 1530, PURCHASING, 205 E. 42nd ST., N.Y. 17, N.Y.

#### LP GAS INSTALLATIONS and ANHYDROUS AMMONIA PLANTS

Designed & Installed
"There's No Substitute For Experience"

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## **7 REASONS WHY** XCELITE **SCREWDRIVERS** WILL DO THE JOB **BETTER!**



HANDLE is of genuine XCELITE plastic. Full man-size. Comfortably-shaped for grip and balance.

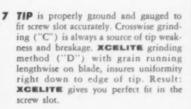
2 SIZE is clearly marked on handle. Easier to select the correct size - easier to re-order. Number on handle is catalog number.

3 EMBEDDED END of blade (winged design) prevents turning of blade in

FLANGE on blade, next to handle, resists shock of pounding.

5 BLADE is precision-forged of SAE 6150 Chrome Vanadium Electric Furnace Steel.

6 "A" shows perfect rectangle of XCELITE Tip, insuring grip in screw slot. "B" shows "dubbed-off" result of ordinary grinding, which tends to lift tip out of screw under turning pressure.



Contact your XCELITE distributor - He has all the Best and Newest XCELITE Tools, plus the backup stock to assure you Immediate Delivery!

#### XCELITE, INC.

Bept. H, Orchard Park, N. Y. in Canada -Charles W. Pointon, Ltd. 6 Alcina Ave., Toronto, Ont. For Originality

For More Information Circle No. 457 on Inquiry Card-Page 17 DECEMBER, 1957

NOW.

a convenient, low-cost way to see what flexible shafts can do for your equipment

FLEXIBLE SHAFTS







on existing machines



For power drives on existing equipment

Here's an exciting new development which allows you to introduce the advantages of flexible shaft drives and controls into your equipment without detailed, time-consuming engineering.

S. S. WHITE STANDARD Flexible Shafts are complete, ready-to-install flexible shaft units designed for immediate attachment to your equipment. They are available in three popular sizes for both remote control and power

Immediately available in standard 3-foot lengths, they can also be obtained on order in any other specified lengths to meet your requirements.





Send for details today. Ask for Bulletin 5608

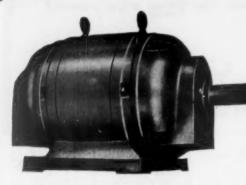
FIRST NAME IN PLEXIBLE SHAFTS

S. S. WHITE INDUSTRIAL DIVISION DEPT. P. 10 EAST 40th ST., NEW YORK 16, N. Y. WESTERN OFFICE: 1839 WEST PICO BLVD., LOS ANGELES &. CALIF. For More Information Circle No. 458 on Inquiry Card-Page 17

VALLEY
BALL BEARING
MOTORS

STAY ON THE JOB.





When specifying the power unit for your machinery, bear these exclusive VALLEY features in mind!

- Specifically designed for 'round-the-clock' duty in high temperatures.
- Drip proof and splash proof, semi-enclosed construction protects motor from harmful liquids and flying particles.
- Fully enclosed ball bearings reduce friction 75% to provide a saving in power.
- Built in ½ to 75 horse power sizes for wide adaptability in your power planning.

VALLEY Motors, stay on the job lenger, even under heavy and continuous power demands. Thus for economical power that will last the life of your equipment — always specify VALLEY.



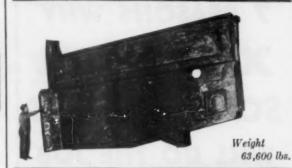
### TOTALLY ENCLOSED

The latest development in Air-Cooled, Ball Bearing motors. Totally enclased to assure protection against dripping or splashing liquids, metal chips, and damaging dust. 2 to 60 h. p.

Write For Descriptive Literature.

ELECTRIC CORPORATION
4221 FOREST PARK BLVD. - ST. LOUIS B. MO.

For More Information Circle No. 459 on Inquiry Card—Page 17 334



PRECISION CASTINGS

CEMENT BONDED SAND METHOD

CHAMBERSBURG ENGINEERING COMPANY

Phone Casting Sales Dept.

For More Information Circle No. 460 on Inquiry Card-Page 17



Face well protected by solid metal wall; but, still more important, entire back is thin metal plate that opens out to exhaust any abnormal pressure. In testing, heavy blank cartridges, fired within back of case, did not even break crystal.

Use "Safecase" for your toughest services. It is standard in Marsh "Mastergauge"—the highest development in pressure gauges. Ask for facts.

MARSH INSTRUMENT CO.,
Sales affiliate of Jos. P. Marsh Corp.
Dept. G, Skokie, III.
HOUSTON BRANCH PLANT: 1122 Rothwell St.
Sect. 15, Hauston, Texas
Marsh Instrument & Valve Co. (Canada) Ltd.,
8407 10374 St., Edmonton, Alberta, Canada

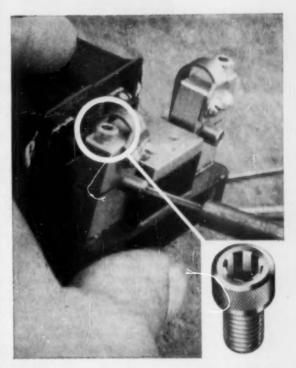
Test Preves Safety Explosiveforce of certridge merely opens out safetyrelease back. Back is firmly attached to case and cannot be dislodged during a pressure blow-out.

**MARSH GAUGES** 

For More Information Circle No. 461 on Inquiry Card—Page 17
PURCHASING



For More Information Circle No. 462 on Inquiry Card—Page 17 DECEMBER, 1957



## They called off test after 20,000,000 operations...

The Bristol Multiple-Spline socket screw still held fast though customer engineers had expected only 2,000,000 operations!

The screw locked and held critical contact adjustment to 0.001" in an ultra-reliable polar telegraph relay. Test was run by the manufacturer, Automatic Electric Company, Chicago, makers of telephone and communication equipment and electrical control devices for industry.

During the 20,000,000-cycle life test, the 0.006" contact space did not exceed the 0.001" allowable tolerance. This was made possible by the Bristol cap screw which locked the adjustment screw in place. This relay—using 4 Bristol socket screws in all—not only has to hold adjustment under operating shocks, but has to operate reliably under extremes of temperature and humidity in outlying railroad telegraph stations. The Bristol screws assure casy adjustment or disassembly when needed.

Reports like this are typical of the outstanding performance Bristol socket screws are giving hundreds of manufacturers of fine products—ranging from electric razors to guided missiles.

Bristol offers the most complete line of socket screws on the market. Hex socket screws—the industry standard—as well as Multiple-Spline. Cap, set, and with every style of point. Sold through leading industrial distributors. Ask for complete data on them today.

A.7.1



For More Information Circle No. 463 on Inquiry Card-Page 17

## letters

#### BIG RESPONSE TO "THE TRUTH ABOUT MILITARY BUYING"

Purchasing Magazine's special study on military procurement in the October issue (page 113) has created a tremendous amount of interest in Congress, industry, the armed services, and the newspapers. Requests for reprints have passed the 3,000 mark and are continuing to pour in. Here is just a sampling of Comments received to date:

This article should help to clarify the problems inherent in military buying. The thorough research and objective presentation of the various viewpoints on this problem reflect creditably on your staff.

I particularly appreciate your pointing out that the mission of supplying the equipment we need, where we need it, and when we need it to insure the security of the nation, is paramount to other considerations in military procurement.

We appreciate your interest and suggestions on this problem. Your recommendations focus on some of the primary problems of procurement. As you may know, action is already underway on recommendations 3, 5, 7 and 8 and others are under consideration.

E. W. Rawlings General U.S.A.F. Commander Wright-Patterson A.F.B. Dayton, Ohio.

It is most obvious that Purchasing Magazine has devoted serious attention to their fact-finding and have arrived at their final recommendations with professional objectivity.

I am particularly gratified that the article mentions the amplification of criticisms in recent newspaper articles and editorials. The fact that the working press amplified the various criticisms emanating from several committees of congress is most serious to the military. That such articles have been published certainly reflects that we have failed to convince the press, and hence the public, of our continuing need for flexibility in military procurement, and of our most serious efforts to operate within the spirit of existing legislation.

The article leaves a very strong impression regarding the unsuitability of formal advertising as a method of procurement. While I certainly appreciate that formal advertising would have little place in private industrial purchasing, I

do feel that when properly used, this method can be very successful in government purchasing. Of course, I certainly agree with you that it has serious limitations and that government should not attempt to force feed the technique in circumstances where these limitations prevent , proper results. On the other hand, we have found competition to be our best negotiator in those areas where formal advertising is suitable. We have not found formal judgment is required by procurement officers in utilizing the system. It is the failure to apply good judgment prior to the soliciting bids which causes much of our difficulty, and it is certainly true that the pressures to advertise bring about situations which under reduced pressure would, and should, have been negotiated. Perhaps, to a certain extent, procurement officers are lulled into a sense of security with the thought that formal advertising is totally mechanical.

I am aware that several of the opinions in the article pertaining to formal advertising were obtained from personnel in the military departments. Our differences appear to be one of degree. For this reason I am particularly interested in your recommendation that the armed services start an overall procurement research program. To my knowledge no concentrated study has ever been made to develop factual data which would establish the capabilities and limitations of formal advertising. Since we lack such factual data, we invariably face our critics with the burden upon us to prove our negotiated purchases reasonable in face of an assumption that formal advertising as the "normally accepted method" is therefore the ideal method.

R. J. Arnold Rear Admiral, (SC), U. S. N. Chief, Bureau Supplies & Accounts Washington, D. C.

I have just finished reading the article "The Truth About Military Buying" in the October issue of your magazine. It was a very comprehensive article and well worth reading (as are most of the articles in the magazine).

I should like to add one more point to your eight point recommendation, that is to standardize on the packaging methods on government buying of small electronic components. This company is a manufacturer of small electronic components, and I am in charge of getting quotations on special packaging on government bids and/or orders. It is discouraging to see how the packaging problem is handled by the government offices. In some cases the packaging cost exceeds the cost of the item purchased, in others the quanti-

ties ordered are ridiculous, i.e. 16 small RF coils sent to four different destinations. Central stockpiling for reshipment should help to eliminate the bottle-neck of procurement as well as economize on buying and packaging costs.

buying and packaging costs.

Jane M. Cheney (Mrs. C. C.)

Asst. Purchasing Agent

Cambridge Thermionic Corp.

Cambridge 38, Mass.

"The Truth About Military Buying" contains a wealth of information that is most helpful to us. In order that we may distribute copies to our committee members and various persons working closely with us, we would like to obtain 100 copies of this reprint, sent to me at the above address. Please bill us for whatever charges there may be.

Theron Rice National Defense Dept. Chamber of Commerce of the U. S. Washington, D. C.

I have just read with great interest your article on Military Buying. You have done a terrific job of covering the most important problems of a complex subject objectively and clearly. It is the first real contribution I have seen which is obviously written by people who thoroughly understand the subject. I am confident it will make a significant contribution toward the education of the public, industry, Congressional representatives and I trust, to the military as weil.

My personal congratulations for a fine article.

Richard B. Uhle Colonel, USAF Deputy Director Directorate of Procurement & Production Office, Deputy Chief of Staff, Materiel

I enjoyed very much reading the special report "The Truth About Military Buying" appearing in the October issue of Purchasing Magazine.

I am confident your report represents many months of diligent research. Your frank and objective treatment of a complex subject which is not always understood, will I hope, make for a better understanding of this subject.

If a limited number of reprints of your report are available, I would deeply appreciate receiving them and would circulate them to our various Field offices.

preciate receiving them and would circulate them to our various Field offices. A. C. Lazure General Counsel Office, Chief of Ordnance Dept. of the Army Washington 25, D. C.

For More Information Circle No. 464 on Inquiry Card—Page 17-> PURCHASING



a Fine Grained, Silicon Killed

## LOW CARBON Flat Ground Steel

This new line is in ADDITION to

SIMONDS FLAT GROUND DIE STEEL

> High Grade Alloy Tool Steel (Oil Hardening — Air Hardening)

Here's a fine-grained, forging quality, silicon-killed steel that opens up the way to important savings on items like jigs, fixtures, patterns, stripper plates, punch pads, die plates, die-blocking shims . . . and parts that don't require heat treatment or in some instances, just case-hardening.

'This new line of low-cost, LOW-CARBON Flat Ground Steel rounds out the present Simonds line of Oil Hardening and Air Hardening Die Steel. What's more, it has equally fine finish . . . and is made to the same close tolerances, with excellent welding quality and machineability.

Simonds LOW-CARBON Flat Ground Steel is furnished in a wide range of flats from ½" to 1½" thick and ½" to 16" wide, and in squares from ½" to 2½". All sizes come in standard, ready-to-use 24" lengths, individually packaged. Stock sizes are ready now . . . special sizes on order. Get full details from your Simonds Distributor today.

### TYPICAL CHEMICAL ANALYSIS

C. .18

Mn. .50

Si. .20

Phos. & Sul. .04

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> For Fast Service from Complete Stocks



SIMONDS Distributor



A	
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#### PROVED BY INDEPENDENT LABORATORY TESTS:

# 48.5% S·M·I\*

## for FERROCARBO°-TREATED IRON

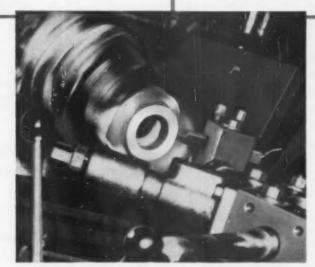
These impressive test results were obtained by an independent research laboratory on gray iron farm equipment castings produced by a leading Midwest foundry, using untreated and FERROCARBO-treated iron of identical chemistry.

Chemical Analyses	Untreated	Ferrocarbo Treated
TC	3.51	3.54
SI	1.91	1.82
CE	4.15	4.15
Cutting speed (ft./min.)	300	300
Feed (in./rev.)	.009	.009
Depth of cut (in.)	.062	.062
Wear Land (in.)	.020	.020
Vol. of metal removed (cu. in.)	42.5	63.0
Weight of metal removed (lbs)	10.9	16.2
Percent improvement		48.5%



\* Surface Machinability Improvement

Tool wear tests were conducted with a single point "Carboloy" grade 44A tool on castings machined at commercial speeds, Flank wear was measured with a 20 power microscope.



FERROCARBO Briquettes—the patented cupola additive by CARBORUNDUM®—are widely used by foundrymen to produce sound iron castings with exceptional strength, ductility and hardness properties. Tests have demonstrated that FERROCARBO-treated iron has considerably better machining properties than undeoxidized iron due to structure control and freedom from segregation. High production industries seeking to reduce costs are buying castings produced by the FERROCARBO cupola deoxidation process as an effective means for increasing production through improved casting machinability.

WRITE FOR MORE INFORMATION on how FERROCARBO produces more machinable iron regardless of metal composition. Ask for booklet A-1409, Electro Minerals Division, The Carborundum Company, Niagara Falls, N.Y.

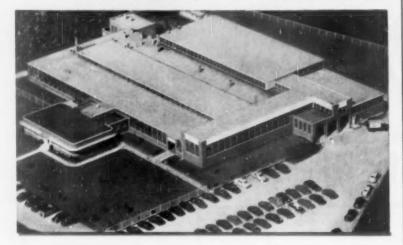
ELECTRO MINERALS DIVISION

## The CARBORUNDUM Company

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For More Information Circle No. 465 on Inquiry Card-Page 17

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#### "Thanks for Your Business"

THIS YEAR has been an eventful year for Borroughs. Each of our divisions — metal office furniture, steel shelving, automotive bins, contract work — has come through with flying colors.

The acceptance of Borroughs products by business from coast to coast has been most gratifying. In fact, at times during the past year, production could not keep pace with demand. We were actually outgrowing our plant capacity.

So in August, we started an expansion program which has added 15% to our space, and will increase our manufacturing capacity from 20% to 25%. New equipment has been installed, and plant re-arranging is in progress.

What does all this mean? It means that we will be able to keep pace with the growing demand for Borroughs products, and at the same time, develop new products to meet your company's needs.

We look forward to breaking all records again in 1958, with the finest line of products and service in our history.

Heorge Bernett

President

## BORROUGHS MANUFACTURING COMPANY

A SUBSIDIARY OF THE AMERICAN METAL PRODUCTS COMPANY OF DETROIT

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## MATERIALS-HANDLING NEWS

NEW AND UNUSUAL APPLICATIONS OF BASSICK CASTERS THAT MIGHT BE ADAPTED TO YOUR HANDLING PROBLEMS



Sometimes a man will get so interested in plant efficiency he forgets office efficiency. Take a look around your place and see if new casters wouldn't help ease work, save floors and keep quiet. Along these lines, Bassick's 2" chair casters have a new wider rubber wheel that stands up 50% longer and gives you greater floor protection. Remember the office as well as the plant next time you need casters.



#### TV on casters

You've probably seen the receiving end of TV on Bassick casters many times, but here at WISH-TV in Indianapolis, they've also got the sending end of TV on our smooth-rolling, easy-swiveling casters. This TV dolly is one more fine product that's going places on Bassick casters. Look for Bassick as a sign of quality on all mobile equipment.



## Oil company's shipping goes smoothly with shock absorbing casters

At Socony Mobile Oil Company's Paulsboro Refinery, big oil drums and cases of small cans of oil have to be moved from factory to warehouse to shipside.

Shock absorbing Bassick "Floating Hub" casters have helped to solve this materials-handling problem. Tractorpulled trailer trains equipped with 10" single and double wheel "Floating Hubs" carry the drums and cartons to the shiploading dock.

There are many advantages to equipping power-pulled trucks with these shock absorbing casters in any plant. They'll stand up to rough service over rough floors and roadways. They protect the loads carried, keep them stable and prevent parcels from falling off trains. They cut down on noise, they track well, and they hold maintenance to a minimum. Ask your distributor about Bassick "Floating Hub" casters.



#### **New Bassick Gear Lock Clamp**

Here's a revolutionary new clamp with a 2000-lb closure strength capable of providing an airtight seal in heavy duty containers. When locking nut (A) is tightened its worm gear mechanism turns gear (B) and closes clamp. This simple gear design provides an infinite number of closing positions, adjusts itself to varied tolerances, needs no special precision mounting. Saves labor in mounting, opening, closing.

#### Talk to your local distributor

Your Bassick distributor salesman can keep you up to date on new products and new ideas in materials-handling. Dealing with him also saves you time since you can fill many of your plant requirements from a single source. THE BASSICK

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3

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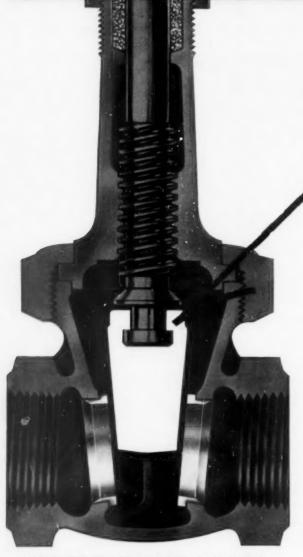
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Fig. 280-U, Bronze Wedge Fig. 280-UN, Niekel Alloy Wedge 35û psi Fig. 280-UX, Bronze Wedge

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